THE RURAL INDUSTRIES OF ENGLAND & WALES

A SURVEY MADE ON BEHALF OF THE
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IV
WALES

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PREFACE

In any consideration of the development of the countryside the place and function of local industries in rural life must occupy a prominent position. Their importance in the past is obvious, when the village was largely an isolated economic unit; in view of the part they might still play in maintaining a fuller life for the country dweller, in stemming the flow of population from the rural to the urban centres, and in solving some of the problems of modern industrialism, the need for a study of their present state, of the extent to which the changes in modern, social, and economic conditions demand their supersession, and of the possibility of adapting and developing them to serve these same conditions, becomes increasingly apparent.

It may be that rural industries can continue to supplement agriculture in the complete rural community, by providing subsidiary employment for the part-time land-worker and the small-holder; by affording the chance of employment in their own homes or villages to the various members of their families; by providing certain requisites of agricultural industry. It may be possible that in the revolution of economic principles and systems which is now being made by all sorts and conditions of persons, certain human advantages in rural industries may be set against the greater production of goods by the larger industrial units of the towns. In particular, the smaller industrial concern enables a man to see the whole series of connexions between the making and using of an article, and brings his work into direct relation not only with his own life, but with that of the community of which he is a member. There is little or no distinction between producer and consumer, and one of the chief causes of present social conflicts is non-existent. The worker in the country 'sees the nature of what he is doing; he is getting products from the land and making use of them by industry. He sees the whole process, and the fact is plain that labour and land are for the sake of himself and others like him who needs the goods.' He sees the grain become flour, the wood from the forest become furniture, the hide become leather, and the leather boots, and the wool cloth—

all beside him, and all of it a plain process of natural goods made useful by men.'[1] The men of the towns, however, have a genius for organization, and if it be necessary that their business should be arranged on a basis involving less specialization than at present, or so that some of the evil effects of over-specialization were eliminated, they may be able to modify existing systems without seriously affecting their productivity. The only basis upon which rural industries can be firmly established is that of a high standard of technical knowledge and skill, suitable machinery, and commercial organization. On the other hand, the moribund condition of many once-flourishing country trades and crafts may have to be recognized as the price of industrial progress in other centres. The modern tendency towards the centralization of industry and large-scale production; the enormous development of transport facilities which has broken down the barriers between town and country; the danger of these small unorganized enterprises becoming sweated industries serving only to subsidize agricultural wages, all of these things may render undesirable any effort towards the resuscitation of many of these ancient crafts.

With so little knowledge available it became clear that a thorough investigation of the position of rural industries, both economic and social, would be advantageous, and in 1919, at the suggestion of the Development Commissioners, an inquiry into the condition of rural industries in the neighbourhood of Oxford was set on foot by the Agricultural Economics Research Institute, at Oxford. It was rather of the nature of a trial trip, an experimental inquiry to explore the possibilities of a more complete investigation, and in the following year arrangements were made with the Development Commissioners and the Ministry of Agriculture for an extension of the survey so as to bring under review the principal rural industries of England and Wales.

The terms of reference of those responsible for the work were to consider—

(1) the existing rural industries and the causes of their establishment in particular localities, such as easy access

[1] D. H. Macgregor, *The Evolution of Industry*, p. 24.

to local supplies of raw material and labour, and local markets for the finished products ;

(2) the various types of organization in these industries, such as small factories and workrooms or individual production, organizations for the purchase of raw materials or the sale of finished products. Educational facilities and the possibilities of technical instruction were also to be borne in mind in this connexion ;

(3) the economic and social effects of rural industries, the conditions of labour attendant on them, the connexion between rural industries and agricultural employment, and how far such industries tend to depress or to ameliorate the lot of the agricultural worker ;

(4) the prospects of development of existing industries and of the introduction of new enterprises, or of the resuscitation of former industries now dead or in a state of suspended animation. In this connexion the existence of competition, both urban and foreign, was to be borne in mind, and consideration given to the conditions under which rural industries can compete with urban production.

The survey was carried out during three years by a specially appointed group of workers. They surveyed the country, county by county, and the results of their inquiries were embodied in reports dealing with the industries of particular localities. From these interim reports (which are available in manuscript, for consultation, at Oxford) the final reports were compiled, dealing with the various industries separately as they occur throughout the country.

As has already been said, the first district surveyed was that of Oxfordshire, and the investigator in this instance was Miss K. S. Woods, who was assisted in part of the work by Miss C. D. Biggs. The results of the survey were embodied in book form, and published early in 1921.[1] From 1921 to 1922 the work was continued by Miss Woods and Miss Helen FitzRandolph, and in the summer of 1922 Miss M. Doriel Hay took Miss Woods's place. The survey of the Welsh industries required a knowledge of the Welsh language, and was undertaken, apart from the English survey,

[1] K. S. Woods, *Rural Industries Round Oxford* (Oxford University Press).

by Miss A. M. Jones, in 1922 and 1923. All these investigators worked under the direction of Mr. A. W. Ashby. A list of the districts surveyed by each is appended.

It is impossible to name all those who assisted them in their work, but I should like to make grateful acknowledgement of the friendly reception accorded to them, and of the readiness with which those engaged in the various industries investigated gave of their time and knowledge. Without their cordial co-operation it would have been an impossible task.

Acknowledgment is due also to Miss F. M. Baker for the work she undertook in seeing the reports through the press, after Mr. Ashby's removal to Aberystwyth.

For convenience of publication the reports have been collected together in four volumes, as follows :

Vol. I. Timber and Underwood Industries and some Village Workshops.

Vol. II. Osier Growing and Basketry, and Some Rural Factories.

Vol. III. Decorative Crafts and Rural Potteries.

Vol. IV. Rural Industries in Wales.

The following report is Vol. IV of the series. Comparing it with its predecessors it is noteworthy that, with the exception of the woollen industries, rural crafts seem to be relatively few in Wales, or to have abandoned at an earlier date the unequal contest with factory production. Two other factors, however, must not be overlooked. The first is the comparative absence of woodland on the western hillsides ; the other, the relative shortage of wage labour in rural Wales. When the greater part of the population is occupied in the cultivation of the family farm, there is less need for subsidiary industries as spare time occupations or to subsidize low wages.

C. S. ORWIN.

ORDER OF THE SURVEY

Date.	*District.*	*Investigator.*
1919–20	Oxfordshire	K. S. Woods and C. D. Biggs
1920–1	Bedfordshire	Helen FitzRandolph
1921	Derbyshire, Leicestershire, and Nottinghamshire	,,
1921–2	Kent, Surrey, and Sussex	,,
,,	Westmorland, Cumberland, and Lancashire	,,
1922	Shropshire, Staffordshire, and Cheshire	K. S. Woods
,,	Herefordshire and Worcestershire	,,
,,	South Western Counties	,,
,,	Durham	Helen FitzRandolph
,,	Northumberland	,,
,,	North Riding of Yorkshire	Helen FitzRandolph and M. Doriel Hay
,,	East and West Ridings of Yorkshire	M. Doriel Hay
,,	Carnarvonshire	A. M. Jones
,,	Denbighshire	,,
,,	Flint	,,
	Gloucestershire	Helen FitzRandolph
,,	East Anglia and Essex	,,
,,	Lincolnshire	M. Doriel Hay
,,	Warwickshire	,,
,,	East Midland Counties	,,
,,	Merionethshire and Montgomeryshire	A. M. Jones
,,	Brecon and Radnorshire	,,
,,	Pembrokeshire, Cardiganshire, Carmarthenshire, and Anglesey	,,
,,	Monmouthshire and Glamorganshire	,,

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INTRODUCTION

THE term 'rural industries' is used in this report, as in those which have preceded it, for industries other than food-production that are carried on in country districts on a small scale and without elaborate machinery. They may be conducted in small factories where water or oil-engines supply power, or in workshops where no machinery is used, or out in the woods, or, more rarely, in the homes. The workers come from country homes, or at any rate from country towns. All, except a few of quite modern origin, arose to supply the needs of the local population, and some present local demand is an essential factor in their survival. They all have their roots in a past time, not always very remote, when the village or the small town was almost wholly self-sufficient, the local craftsmen fashioning local material into the necessary implements, clothing, crockery, harness, or footwear according to their various trades. Some bear traces of a still remoter past, when there was no clear division between food-producer and craftsman. For example, fishermen still make the coracles that they need for salmon-fishing in much the same manner as their hunting and seafaring ancestors must have made them before the Roman invasion or when they fled from the Anglo-Saxons, though the skins that used to be stretched across the hazel or wicker frames have given place to tarred canvas or calico.

Commercial methods are often as primitive as manufacture; barter is still practised here and there, and in the woollen industry the 'domestic system' by which the farmer has the fleece of his sheep made up at a factory into cloth for his own use has not altogether disappeared. The development of this particular industry through its various stages is of extraordinary interest to the student of economic history; in Wales it is as though development had suddenly been arrested at various points, and the old order is seen side by side with the new. This survival of the more primitive forms gives a special interest to the study of rural industries. In spite of the outstanding fact of their gradual decline, the question arises whether there may not be, after all, some immutable factors in the environment which may still preserve

them, not as anachronisms but as a part, however small, of modern social life.

But to understand the practical aspects of their present position, these survivals must be considered in relation to the modern agricultural methods of Wales, the geographical conditions which largely determine these, and the industrial conditions which influence the whole Principality.

The farming as a whole is pastoral rather than arable; sheep-rearing on the higher farms and stock-rearing on the lower ones; and the farms, apart from the extensive sheep-walks of the highlands, rarely exceed about 100 acres in extent. There is not the same demand for labourers as in the arable districts in England, and the family farm, employing little outside labour, is the prevalent type. In 1921 the Census report gave the farmers and graziers, with the sons and daughters working on the farms, as 5,613 in Cardigan and 8,878 in Carmarthen, whereas the numbers of agricultural labourers were only 2,766 and 3,558 respectively. Thus, in speaking of the population in the agricultural counties of Wales, a population chiefly of working farmers and their families is understood, and it is this population that creates what local demand there may be for rural industries. The farmer, his wife and children, lead busy lives on the farms, and do not need subsidiary employment. In some districts of South Wales girls are employed on the farms, but a more usual custom is for girls in domestic service at the farms to help also in the farm work when extra labour is needed.

Geographical Divisions

The Highlands

Nearly the whole of the geological formations in Wales are of the *Palaeozoic* Age—old hard rock, which generally speaking is not very fertile for agriculture. By its hardness it has withstood much weathering, becoming very rugged in outline, but still reaching high above the level of the sea. Snowdonia, the Berwyn and Plynlimon ranges, and the Brecknock beacons form a more or less continuous system of highland across a large part of Wales. The ground in these districts reaches an altitude of 1,200 feet in most parts, and there are scattered peaks and highlands reaching over 2,000 feet. The land rises fairly steeply from the western shore to the highland, where the south-western onshore winds deposit

much of their moisture, the annual rainfall being above 60 inches, and in some of the highest regions of Snowdonia reaching 100 inches and even 150 inches.

The height of the land and its rugged character, its high steep-sided ridges and peaks separated by narrow and deep valleys, make cultivation impossible. Neither is it suitable for the grazing of cattle, for the grass on these higher slopes is too short and wiry, and is only fit for the summer grazing of the hardy Welsh mountain sheep.

The tendency on the highlands is for a single farmer to add more and more acres to his 'sheep-walk'. Some have hundreds of acres and rear thousands of sheep every year. The only labourers they need are a few shepherds and extra help for shearing. It is the custom for ten to fifty men to gather together for a day or two to shear the whole flock on one farm. Few agricultural implements are needed; no horses and no seasonal labour; and the population is very scanty, all being engaged on the sheep farms. Only where the slate beds occur is there a different element among the population.

The Lowland Slopes

By far the largest proportion of the land lies between 200 and 800 feet above sea-level. Here mixed farming is the chief occupation, with a tendency to revert from tillage to pasture, rearing cattle on the more fertile land and sheep elsewhere. There is a consequent decline in employment on the land. Highland sheep are wintered on the farms, and many of the farmers on these lower slopes own highland sheep-walks as well. The mixed farming causes a demand for the repair of implements and the shoeing of horses, and the scattered trees give timber for the village carpenter, but there is not much woodland, and few woodland industries. The force of the streams is used to work most of the surviving small woollen mills, which are to be found at the point where highland falls to more fertile and cultivated lowland, for here there is a choice of wool, not only that of the hardy Welsh mountain sheep, but from less hardy lowland breeds that need more shelter and better pasture but have softer and longer wool.

The River Valleys

In the river valleys very fertile soil is to be found, which allows of easy cultivation and furnishes good cattle grazing.

The farms are small in acreage and they employ much labour, and these alluvial districts have a comparatively large population. Much of the land, especially along the Wye, Towy, Teify, Conway, Clwyd, and Severn rivers, lies less than 200 feet above sea-level, as does almost the whole of Anglesey. There is a tendency even in the river valleys to lay down arable land to pasture and to employ less labour, but mixed farming is the most usual method.

The farmers need implements, horses, and harness, and here the village workshop and its craftsmen is a necessity. A certain amount of casual labour is needed on the farms, but this does not seem to give rise to much subsidiary employment. These valleys are well wooded, especially the eastern valleys, and here such woodland industries as occur in Wales are found. Anglesey has very little woodland owing to the force of the south-west wind, and this is partly the reason why the western facing valleys of Wales are not as well wooded as those facing eastwards.

There is hardly any underwood grown in Wales. Before 1914 it was estimated that there were 181,610 acres under woodland, or 3·75 per cent. of the total area of Wales. Since then undoubtedly 50 per cent. or more of this woodland has been cut down, and this leaves the Principality with an exceedingly small amount of timber and a great need of afforestation. It has been reckoned that there are some 50,000 acres of bare but afforestable land on the lower slopes of the mountains, and in the whole of Wales an area of 300,000 acres is believed to be more suitable for timber than for agriculture. The winters are usually mild, the summers cool and the rainfall abundant, and coniferous timber, such as Douglas fir, spruce, and larch, grows exceptionally well.

The Forestry Commissioners have already planted several hundred acres of hill-land, and more work of this kind is likely to be undertaken in the future. There is plenty of demand for timber, for the South Wales coal-field alone consumes $1\frac{1}{4}$ million tons of pitwood annually, practically the whole of which is imported from France at the present time. It should be noted, perhaps, that much of this is irreplaceable, as it represents the return cargoes of vessels employed in the export coal trade. Still, afforestation would provide work in planting, felling, and sawing, and much land that is now practically useless would become productive. There are examples of industries which have been started

at Vyrnwy[1] which show that industries subsidiary to the supply of pit-props might thrive in the less remote forest regions.

The Coast of Wales

The coast-line provides excellent landing-places for small fishing boats. At Milford Haven there is a large fishing fleet, and many of the nets in use are made by women in this neighbourhood, while others are mended by the men. In Pembrokeshire, Anglesey, and Carnarvonshire wicker lobster-pots are made locally for the lobster fishing. A few baskets are made in Carmarthenshire for the cockle gatherers to carry on their heads. The seaweed gathered along the Gower coast is made into 'laver' bread, which is in request in the mining valleys. Rushes are gathered on the sand-dunes of Anglesey for making mats and ropes at Newborough and Aberffrow.

All the sea-side towns and villages are well known as summer resorts The visitors are ready customers for certain articles. Many a small woollen factory employing a hand-weaver rents a window or gets a shopkeeper to display its goods at a shop in one of these resorts during the summer, and much surplus stock is disposed of in this way. Purses and leather work, toys, ornaments, and other articles are also sold in this manner during the summer months.

Water-power

Wales as a whole is exceptionally well favoured in water-power. The central range of highland with its steep glacial hollows, and deep, elongated lakes with narrow outlets, the heavy rainfall and the very sharp gradients of the streams along their upper courses, all tend to favour the hydro-electric scheme and the engineer, and already advantage has been taken of this.

So early as 1890 water-power was used at some of the slate quarries of North Wales for the pumping of water and for lighting purposes. By 1902 many of the Merionethshire quarries were utilizing the water-supply for the same purposes, and were even transmitting current for about two miles. In 1903–4 the 'North Wales Power and Traction Company' made a storage reservoir of Llyn Llydaw, Snowdonia, a natural lake, building a generating station in the valley below near Beddgelert, and it now transmits the current

[1] See p. 61.

over 110 miles of power lines to the quarries of Carnarvonshire and Merionethshire.

Between 1907 and 1909 the Dolgarrog Aluminium Company, Ltd., in the Conway valley, decided to make use of the immense water-power available from the Eigian and Cowlyd lakes situated also in the Snowdon range. Large dams were constructed, and within the last few years still more water has been stored and it now provides the north coast towns of Conway, Llandudno, and Colwyn Bay with electric power. At present the North Wales Power Company is contemplating a supply for the whole of Anglesey, Carnarvon, and Merionethshire, and parts of Denbighshire, and eventually for the whole of North Wales.

There are also local power stations already in existence, and still more developments are contemplated in the future. The compensation water from the dam at Lake Vyrnwy, the Liverpool Corporation reservoir, is being utilized for power and lighting at the small village of Llanwddyn, and thus the one reservoir serves two purposes. So far very little hydro-electric power is generated in South Wales.

The possibility of getting electric power either from the large transmitting centres or by utilizing the local water-power will no doubt play an important part in the distribution of industries in the future, and cheap power in rural areas may tend to revive old industries and to bring new ones into the country. North Wales is particularly well supplied, and with good communications with the big markets in Lancashire, will undoubtedly attract attention.

In the earliest days of machine production the rapid streams of Wales, Yorkshire, and Lancashire played a very important part, and caused the first great migration from the southern woollen manufacturing areas of Somerset and Berkshire to the hilly regions of the north. But steam-power caused another migration to the region of coal-fields, and the woollen mills and weaving sheds by the hill-streams are now mostly idle and deserted. But the development of hydro-electric power may once again cause the water of these streams to be harnessed to rural mills, and the woollen factories which are still working as a relic of the past may even now be entering upon a new era.[1]

The invention of internal-combustion oil-engines also opens up great possibilities for the small workshop and for

[1] p. 34.

the craftsman with a little capital and a limited market. Small oil-engines may open fresh possibilities to the country smith and wheelwright, who have suffered severely through the dwindling of the rural population, changed methods of farming, development of motor traffic, and severe competition from big implement and wagon works.[1]

Industrial Wales

Not only does the system of farming tend to a sparse rural population, but the pull of the industrial regions of South Wales and of Flintshire is felt all over the Principality. Even from the remoter villages many young men pass to the mines, and a continual migration is going on from the farms, villages, and country towns to the iron- and copper-works, to seaport commerce, and to the coal-mines, all of which give scope for urban employment of many kinds. The modern conditions of mass production, big business, and open competition, which gradually oust more primitive industry in big industrial centres, make their influence felt ever farther afield, as train and motor traffic makes its way into the heart of the country. It is not surprising, with the stream of migration from the rural to the increasingly industrial neighbourhoods, that rural industries are scarce, and are, moreover, dwindling in number and importance.

The Mines in Relation to Rural Industries

Before examining the separate industries it may be well to consider the effect of the mines, not only in the general attraction of labour from the country districts, but to see where they have given rise to rural industries by creating a market, and where, on the other hand, they have had an opposite effect by absorbing the labour that might have been available for these. Their development is also of very great interest in illustrating the various migratory movements of a population. While some districts are becoming more and more urban, others once busy and flourishing have been left empty and lifeless as the tide of development has flowed elsewhere. The study of rural industries may suggest means of dealing with the problems of unemployment caused by such desertions, for a population is not always mobile enough to follow these industrial changes quickly, which are apt to leave a remnant

[1] See ch. 7.

that may become destitute of employment. The growing places, too, have their problems, but these are of an industrial rather than a rural character.

North Wales Coal-field

By far the most important mines are the coal-mines. The northern coal-field stretches along the river Dee as it passes through Flintshire and continues as far as the Wrexham district of Denbighshire, varying from two miles wide in the north to about seven miles wide in the south-east. There are out-crops in many places, and the mines are scattered over this field.

Although now devoid of trees, this was once a fairly well-wooded district, and the charcoal that could be obtained from the woods first attracted iron-workers to this district. Later, local coal was used instead of charcoal in iron-smelting. Iron is no longer exploited locally, but iron or steel from other parts is now used in the works near Wrexham and at Mastyn, Shalton, and Ferryside. The coal also is used in brick-making and pottery on the clay beds at Buckley, and in the silk-works of Flint. The district, in short, is fast becoming industrialized ; it has excellent communications with Lancashire, and is losing its Welsh language and character. The coal- and iron-works are draining the country-side of its men, and the silk-works and subsidiary industries are absorbing the women. Buses are sent into the country to take the women to and from the silk-works. The old potteries are the only industries that can be considered rural, and they are likely to die out or to develop on purely industrial lines.[1]

South Wales Coal-field

The South Wales coal-field is much larger, and extends east to west from Pontypool to the western coast of Pembrokeshire, and broadens from a few miles wide in the west to about twenty miles in the east.

In the west there are a few coal-mines, and though there are no large manufactories, the influence of the mines is felt over a wide area. In the east the coal-field covers the whole of Glamorganshire except the Gower Peninsula and parts of Monmouthshire and Carmarthenshire. The coal-field is a plateau between 1,000 to 1,300 feet high, deeply dissected by

[1] See ch. 6.

small, rapid streams flowing to the south-east. Owing to the smaller anticlines within the larger syncline, it is possible to work the coal seams in almost any district, though it is more difficult near the southern edge where the dip of the seam is steeper. It is not surprising, therefore, that the earlier mines were in the northern part of the field.

Above the coal measures lies the Pennant sandstone, which contains no mineral wealth and yields poor soil for agriculture. Before the discovery of the coal the district was very sparsely populated by farmers who had a severe struggle to eke out a living by cultivating the soil, and took to rearing the Welsh mountain sheep on the hill-sides. As a result of the wool and a good water-supply, a few woollen factories appeared along the banks of the streams early in the eighteenth century, before elaborate machinery for woollen manufacture had been introduced into this neighbourhood. These factories have since undergone many changes, and most of them were deserted when later in the century coal and iron began to be worked to an appreciable extent.

The Vale of Glamorgan was much more densely populated than the plateau region, and the vale towns were good markets for agricultural produce. Owing to the marshy bottoms of the hill valleys leading down to the vale, roads called 'ridgeways' were built along the sides of the valleys, many of which may still be seen to-day. The greater importance of the high ground in early days is indicated by the fact that the region used to be known as the 'hills', whereas now that coal is worked from the valleys it is known as the 'valleys'.

The densely wooded valleys attracted the attention of iron-workers at a much earlier time than at Wrexham. At the close of the eighteenth century the iron trade developed rapidly, largely owing to immigrant iron-workers from elsewhere. The forests on the hill-slopes were gradually destroyed to provide charcoal for smelting, as they attracted more and more iron-workers to the neighbourhood. It was known that coal existed in the neighbourhood, but it was not until the scarcity of charcoal was severely felt and the iron industry began to decline that coal came to be extensively used in iron smelting.

Until about 1820, all the coal that was mined in this coalfield was used for this purpose; iron began to be brought to the coal, and these valleys became very thickly populated. Then came the beginning of the export trade in coal, and the

consequent development of Swansea, Port Talbot, Cardiff, and Newport as seaports.

Recently it has become the custom to import haematite ore from Spain to make steel, and the Welsh iron ore has been discarded. Hence the iron industry has left the hill-valley coal-mines for seaport towns such as Llanelly, Swansea, and Neath, where the smelting is now carried on.

These changes have caused a great increase of the total population of South Wales coal region, and a redistribution first from hills to valleys and then from valleys to seaport districts.

At one time each little area supplied its own wants; there was plenty of timber for woodland industries, a great deal of charcoal burning was carried on, and a variety of rural industries flourished. To-day all the existing industries bear some relation to the coal and iron trade. These are so numerous that no man in normal times need be without employment, and the cost of living would be prohibitive to craftsmen of the old-fashioned 'rural' type.

To judge by Census figures, migrants have found their way into this coal-mining area, not only from Monmouthshire and all the six counties of South Wales, but from North Wales as well. Most of the migrants are young men rather than whole families. The wives of some of them follow, but a large majority of the women and their families remain in rural areas while their husbands work in the mines. The wages are much better than those paid in agriculture. This drains the country-side of young men who might otherwise have been engaged in agriculture or in some rural industry.

If the mining industry has absorbed much of the population, it has also provided a big market for agricultural produce. The Teify Valley flannel manufacture[1] depends largely on this market. Tools and handles are made in the woodlands of Monmouthshire not only for farmers but for miners, even though they go to Birmingham first, to be fitted to the tools. Chair legs, pottery, and clogs, all supply the mining population, but there is an increasing tendency for rural clog-soles to be ousted by machine-made soles from Lancashire; and other rural industries, such as barrel-making, have given way to industrial manufacture in the towns. On the other hand, the farmers themselves benefit by this populous market for their butter, cheese, and eggs.

[1] See p. 30.

Slate Quarries

On the steep mountain slopes of Merionethshire and Carnarvonshire there are valuable slate beds, some on the surface and others underground, and thousands of quarrymen live in villages scattered along the floors of the valleys, a few of whom have each a cottage and a little land on the mountain-side. In 1910 the number of North Wales quarrymen was between twelve and fourteen thousand, the output of slates from Wales being 80 per cent. of that from the whole of the United Kingdom.

There is little scope for rural industries in the slate districts. There are woollen factories at Blaenau Ffestiniog and Penygroes in the Nantlle Valley, and slates with birch frames, and slate pencils, are made for schools in India as a subsidiary industry to slate quarrying. Slates have not been in much demand at home since exercise books took their place in the elementary schools. The old hard rock bordering on the slate quarries yields excellent stone for building and road-making, and gives employment to some hundreds more quarrymen. There is no casual labour in the quarry district and there is work of a kind for every one; apart from the temporary depression, wages are fairly good.

It was the development of the quarries that gave rise to the clog-making industries [1] in the neighbourhood. As there was no wood for the soles, journeymen were sent into other parts of Wales to cut it, and the soles were made in the neighbourhood to sell to the quarrymen. But cheap boots have gradually found favour, and the demand for clogs has almost disappeared. Another industry that exists to supply the quarrymen is the tobacco industry of Carnarvon.[2]

Lead-mines

The most important among the lead-mines which are found in various parts of Wales are those of eastern Cardiganshire and of Flintshire. The Flintshire mines are near the western edge of the coal-field; some of them are still worked, but the underground rivers of this limestone region give great trouble and have made it impossible to continue to work many of the mines.

The Cardiganshire mines were exploited near the eastern end of the valleys that penetrate the Plynlimon range. These lead-mines used to employ hundreds of men who lived in

[1] See p. 50.

[2] See p. 83.

little hamlets scattered along the valleys, which were too narrow to allow of the growth of any big village. Thus it happened that large villages grew up at the junction of the valleys, and although there was little else but lead-mining and sheep-farming in the neighbourhood, these villages became centres where the blacksmith, wheelwright, carpenter, saddler, boot-maker, and woollen manufacturer were to be found. Although most of the lead-mines have been closed down, and conditions have been modified by the ease of transport, even to-day these village crafts still hold their own in such central villages.

Gold-mines

Gold was mined at Dolgelly during part of the nineteenth century, and at one time hundreds of men were employed. At that time there were four or five woollen factories, a few tanneries, currieries, and a cooperage and other works as well. All that now remains are one small gold-mine and a few tanneries.

Copper-mines

Less than fifty years ago thousands of men were employed in mining copper ore at Parys Mountain, in Anglesey, where there sprang up the town of Amlwch. Imported ore, which is smelted at Swansea, the port of arrival, has killed the industry, and to-day, though it is still inhabited, the town appears almost lifeless. The clog-making and tobacco manufacture that arose to supply the miners still exist to some extent, but have had to find markets elsewhere.

Lime

The carboniferous limestone out-crops in central Flintshire and north Denbighshire give employment in normal times to a few hundred men at the quarries, but whereas the limestone was formerly burned, it is now only crushed and sent away to Glasgow, Fleetwood, and Liverpool. Lime is still burnt at the out-crops on the northern edge of the South Wales coal-field, at Llandebie, Drefach, and a few other places.

Peat

In the small hollows in the highlands of Central Wales are deposits of peat. Some of this is cut and used for fuel by the farmers owning the land. Either one of the farm servants or a casual labourer cuts the peat about June, stacks it to dry,

and carts it in August to the farm. Peat, even of the best quality, is much inferior to coal as a fuel, and hence is only used in those areas where it can be easily 'gained'. Many of the farms on these highlands now use coal, and peat fires are becoming less common. The cost of transport of the peat from these areas make it unprofitable for use in manufacture.

There are also large deposits of peat in low-lying marshy land, such as at Tregaron and Borth, in Cardiganshire. On the former bog certain experiments have been tried for the conversion of the peat into crude oils. Machinery has been set up and much peat cut, but the experiment has not been successful owing to the difficulty of dehydration. Near Trawsfynydd, in Merionethshire, a large amount of peat was cut a few years ago. A light railway was built for transferring it to the railway, and the peat was sent off in blocks to Yorkshire. This scheme, too, has been abandoned.

In Lancashire a large number of fire-lighters are made from peat, and the manufacture appears to be quite a success. Any use of peat from the mountainous areas for such purposes is out of the question, but the low-lying bed with good railway facilities appears to be favourably situated for such an experiment.

The following survey of rural industries is by no means an exhaustive study. The whole work of investigation was immensely more difficult than it would have been under normal trade conditions. The general depression resulting from the Great War and the subsequent chaos in the exchanges has made local conditions abnormal and prospects uncertain. It is possible, however, to gain some idea as to how far the general decline in rural industries, with symptoms of expansion here and there, which emerges in this investigation, is the result of abnormal and temporary conditions, and how far it is an inevitable part of the present trend of development.

The woollen industries have suffered the most from post-war conditions, and amongst these the factories of sudden and recent industrial expansion have suffered far more than those which have kept to their former market, whereas the hand-weavers and the tiny rural mills have not felt much change.[1]

The village workshops are feeling the effects of the gradual

[1] p. 20.

exodus from country to town, rather than any special war effects, though a rise in prices naturally affects all classes. And here and there are flourishing craftsmen who have succeeded in moving with the times.[1]

The decline in the wood industries [2] seems to be a result of scarcity of timber, severe industrial competition, and the existence of competing occupations, such as mining. But basket-making and osier-growing have been adversely affected by the exchanges and cheap foreign imports, and it is impossible to say whether they might otherwise have flourished. Probably the truth is that the local market, even in a country town, is not sufficient to give work to more than a very few basket-makers, and that there is not much room for expansion.[3] In the leather trades again, the change in tannery processes and the decline in the local market for boot leather are due little, if at all, to the war effects, and here there may be possibilities of survival if it be true that strong country boots are still finding favour with countrymen who want something weather-proof and durable.[4] There are also possibilities of expansion of sheep-skin tannery for a growing industrial market,[5] and of certain subsidiary leather industries which appeal to the summer visitors.[6]

Although undoubtedly the decline in rural industries is connected with the general migration from country to urban districts, there are signs which seem to point to a migration back into the country from the towns, and where the country population increases there will its demand for certain local products also increase, if local producers are alert enough to provide for a new demand. Not only is there a tourist and visitor population which increases every year in numbers, but the motor-car has brought residents who were obliged, or who preferred formerly, to live in towns or suburbs, rather than to be isolated in the country. Congestion of the towns and the shortage of employment may also help to turn the tide. High rents and high labour costs are causing some industrial firms to look to country districts for a labour supply and to set up small country factories, as for example, the ready-made clothing factories described in Chapter III.[7] A few leather factories have sprung up quite recently to deal with the otherwise waste bits of sheepskins that are tanned

[1] pp. 106 and 111.
[2] ch. 3.
[3] p. 69.
[4] p. 114.
[5] p. 87.
[6] p. 117.
[7] See p. 42.

for use in the cotton manufactories,[1] and here and there a village craftsman has made use of machinery and has developed a manufacturing trade. The decline of some rural industries during the last ten or twenty years may even now have reached the ebb, and the tide may turn.

There is no doubt that a flourishing craft is socially and educationally useful in a rural community. In a population composed entirely of small farmers and in market towns composed entirely of tradespeople, there is a danger of a biased point of view in matters of local government and social policy. The presence of an industry in a village or a small town brings in a different element and different ideas which are likely to enrich social life and to make for progress. A craft or industry which provides some choice of employment for the young people of either sex, or even puts ideas of skilled employment into their minds as alternatives to unskilled labour or to farm-work, certainly has an educational value of some importance. The skill needed for the all-round type of trade which often survives in country districts, is of a kind that cannot easily be acquired in any big works or factory. And some of the crafts are of more than antiquarian interest and are worth preserving for their own sake. For example, hand-cleft chair legs, hand-woven home-spuns, and oak-bark tanned hides, are still wanted for their superior quality, even if not by the many. Advice as to machinery, information as to some market, instruction as to fair prices, better terms on which materials might be bought, cash payments instead of long credit—any of these things may give the needed stimulus to declining industries.

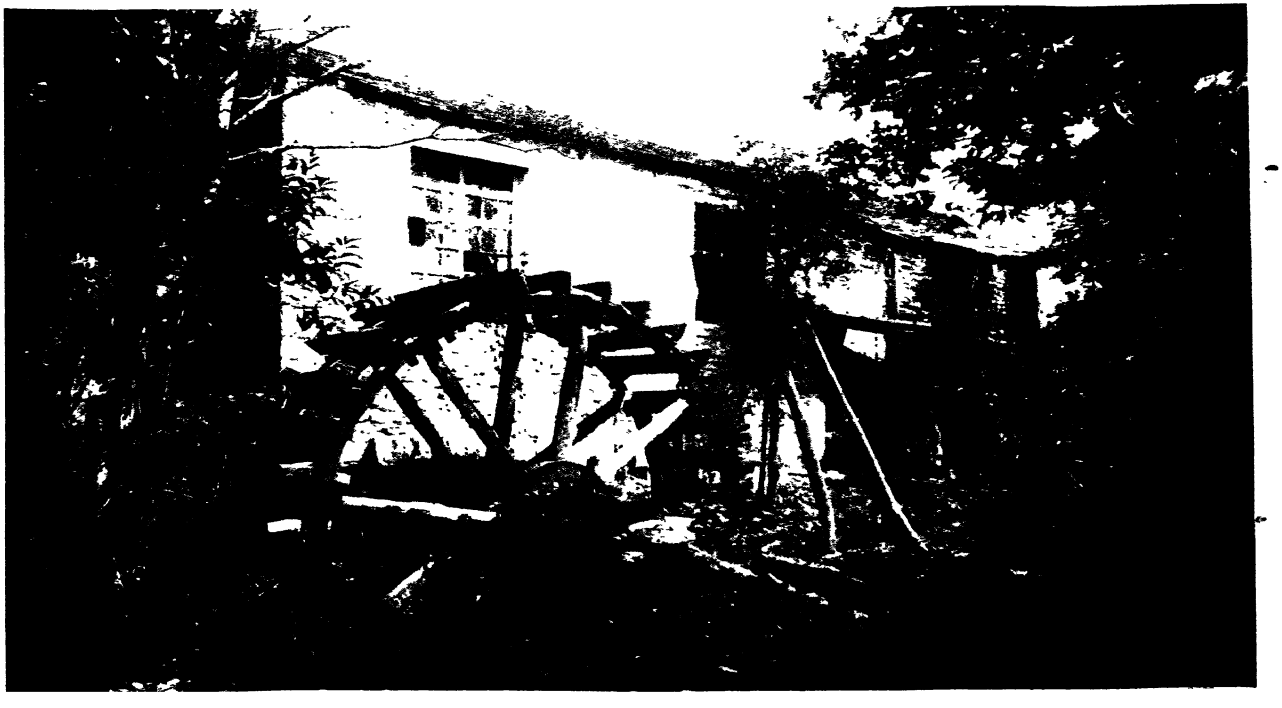
Education is needed if new markets, local or otherwise, are to be supplied, and it is of little use trying to develop trade unless the quality of the work is good enough for it to hold the new markets when found. The nature of the education required varies somewhat according to the type of industry. In the village workshops, the chief need appears to be a knowledge of small engines and their uses; in the woollen industry, more attractive dyeing[2] and more enterprise generally in design and colouring; in pottery, more general experience of 'throwing' with education in glazing and colouring.[3] A knowledge of book-keeping and business methods would everywhere be advantageous.

In education the Women's Institutes may play an important

[1] See p. 90. [2] See p. 37. [3] See p. 99.

part. Their influence is at present educational rather than economic, and if they can inculcate appreciation and good taste, their work will be all to the good for the rural craftsworker.[1] Other educational experiments are described later, notably the very interesting experiment at the Barry Training College, which deserves every encouragement. The success of the dyeing instruction arranged in Cardiganshire shows that education offered in a convenient and practical way is acceptable to rural craftsmen, and has been found helpful in the past.

[1] See ch. 8.



THE OLD WOOLLEN MILL

CHAPTER II

THE WOOLLEN INDUSTRY

THERE are to-day about a hundred and fifty woollen factories in Wales. It appears that while some of them have developed on modern industrial lines, there are ninety-four which still use water-power only. There are, in addition, a number of individual hand-loom weavers working in the neighbourhood of spinning and fulling mills. Altogether, the woollen industries employ by far the largest proportion of the rural population not employed in agriculture or in the village workshops. A large proportion of the wool is local, and the industry finds a considerable proportion of its market among the local population.

Historical

The history of the woollen industry from earliest times is extremely interesting and instructive to the student of rural industries. Not only does it show the great antiquity of some of the processes of work and systems of trading that are still to be found, but it gives valuable illustrations of the broader principles that affect the migration, and the increase or decline of the rural population.

The art of weaving is said to be of Celtic origin and known to the Britons before the Roman invasions. The head man of the 'kindred' used to teach the craft to all members of the family.[1] Markets must have been developed so early as a thousand years ago, for the industry in Merionethshire had a code of laws compiled by Howell Dda.[2] It received an impetus from Flemish weavers who settled in South Pembrokeshire and the Teifi Valley, and although the South Pembrokeshire industry has entirely disappeared and there are no traces of the Flemish race or language to be found, they had a far-reaching influence on manufacture. For it was in the Flemish settlements that the fulling or 'pandy' mills first appeared, so early as the fourteenth century. Water-wheels were used to work the two heavy wooden

[1] E. A. Lewis, *Industry and Commerce in Mediaeval Wales.*
[2] *Story of Montgomeryshire.*

hammers that beat the cloth. From this rudimentary type of water-mill, and the mechanical inventions of three or four centuries later, was developed the machinery that was to revolutionize both the industry itself and the social life of the workers in it. During the sixteenth and seventeenth century[1] the fulling mills and the manufacture of wool increased and wool became an important part of Welsh trade. Shrewsbury, Cardiff, and Carmarthen, and later Carmarthen only, became the staple towns through which wool was sold to England. Trade declined early in Pembrokeshire, most of the industry migrating to North and Mid Wales. Except for the fulling at the mills, the industry was still domestic in character; the sheep were reared on the hill-side, the yarn was spun at the farmer's home, and the cloth was woven in a little lean-to shed by the weaver's house. After fulling and scouring at the mill, the weaver returned the cloth to the farm or sold it at some local fair.

By the end of the eighteenth century the amount of cloth that was made in Wales had increased very much. Weavers of the Severn Valley rode with their bales of flannel to the fortnightly market at Welshpool: here they were met by English merchants, also with pack-horses, who bought the cloth and took it to English towns.

It was at the end of the eighteenth and the beginning of the nineteenth century that invention made it possible to spin and card by machinery. A number of factories sprang up alongside the streams of North Wales that were rapid enough to supply power to work the new machinery. At the same time the weavers were gathered together in one building, and instead of working as master-men the introduction of the factory system began, and from six to fifty hand-loom weavers would work for the same employer in a large upper-story room built over a number of dwelling-houses in the village near the mill. Many houses built in this way can still be seen at Newtown, though the upper rooms have long ceased to be weaving sheds.

The valleys of the Dee and of the Severn, particularly along its upper waters as far as Talerddig, were the busiest districts. In Carnarvonshire there were a number of small mills making a brown material worn in Anglesey and Merioneth; the white cloth from the Dee valley was sold at Shrews-

[1] A. J. Skeel, *The Welsh Woollen Industry in the Sixteenth and Seventeenth Centuries.*

bury, and the annual value of Severn Valley flannels sold about the year 1790 at Welshpool was estimated at £200,000.[1] About the middle of the nineteenth century another far-reaching change took place, for the industry became concentrated in a few large factories, notably at Llandidloes, Newtown, Llangollen, and Holywell, and the number of small rural factories began to dwindle. There are, however, many mills of the old type still working, most of them in Cardiganshire.

Meanwhile, in South Wales development was slower; a few small carding and spinning factories near the rivers sprang up to supply yarn for stockings that were knitted by the miners' wives at home, but there were no big weaving works. About 1800 a large woollen factory was established at Bridgend where about a hundred people, chiefly children, were employed. Many more, it was said, might have been employed, but 'there is a perverseness in the people of this part of the country which inclines them to prefer a life of indolence and want to labour and sufficiency'. Most of the products had to be sold as yarn because 'though the price of labour is here comparatively low, yet the managers were unable to get the same article woven under 3*d*. a yard which is done in the West of England for 1¼*d*.'

It was not until the middle of the nineteenth century that flannel weaving began to develop in South Wales. A number of individual hand-loom weavers settled in the valleys of the Teify and the Towy and their tributaries. In the small, entirely rural district of Drefach and Pentrecourt, measuring only three by two miles, two spinning factories had been built between 1800 and 1860, and not a single weaving factory. By 1899 there were at least nineteen woollen factories, nearly all of them carrying on all branches of the manufacture. To-day there are over a hundred factories in this part of South Wales where spinning and weaving are carried on.

Present Position

The very poor state of woollen manufacture during the time of the investigation made it extremely difficult to form a reliable opinion of the industry. An investigation carried

[1] See *National Directory of North Wales, 1828*, and M. Davies, *Survey of North Wales, 1799*.

out under more normal conditions would probably reveal several other important considerations and points of view which were obscured by what may be passing conditions. Despite the difficulties under which the manufacturers were working, they showed a remarkable desire to help and to give such information as would yield a true impression of the industry.

In the present state of depression in the trade many of the looms and carding engines are lying idle. Hence a classification of factories according to the number of employees would not give a true impression. There is no hard and fast division between the different types, but a rough division may be made between the large factories with steam engines dealing with the wholesale trade and employing from thirty to one hundred workers, and the small factories run by the owner and one or more helpers, using water-power and depending on their own neighbourhood both for materials and market. For convenience these small factories are called 'rural' and the others 'non-rural', but this is no true classification, for some of the bigger factories are in the heart of the country and some of the smaller ones are not. For example, the largest woollen factory in Pembrokeshire has only a few houses near by, and the population is too small for the railway company to build a station there. On the other hand, there are little factories on the outskirts of Fishguard and Port Talbot, and sometimes both types are found within a few hundred yards of one another.

Of the 151 wool factories found during investigation, the south-western counties of Carmarthenshire, Cardiganshire, and Pembrokeshire, contain over 100. The following list will show the distribution and the proportion of factories in which water provides the only power:

	Total.	*Approx. no. using water-power only.*
Carmarthen . . .	61	28
Cardigan . . .	32	23
Pembroke . . .	14	11

In four counties of North Wales the distribution is as follows:

Carnarvon . . .	7–9	7
Montgomery . .	9	4
Merioneth . . .	5	5
Denbigh . . .	5	4

and in other counties:

	Total.	*Approx. no. using water-power only.*
Glamorgan . .	6	3
Anglesey . . .	4	4
Brecon . . .	3	2
Flint	2	1
Radnor	2	1
Monmouth	1	1

In this list are included the 'pandy' or fulling mills, and the factories where power is applied to spinning or weaving, or both. Some factories carry on all three processes. There are also a number of individual hand-loom weavers to be found in the neighbourhood of the spinning or fulling mills who are not included in the list.

Except for five small weaving factories mentioned below, which do not use water-power, the factories of a 'rural type' roughly correspond in number and distribution to those in the above list which depend solely on water-power. Although it will be seen that some of them have introduced engines, the list gives a fairly correct indication of their distribution among the Welsh counties.

The 'rural' factories may again be grouped into general factories, carrying on all the processes which convert the wool into finished cloth, and factories which confine themselves to one or two processes only.

Woollen factories in which most, if not all, the processes of manufacture are carried on, are to be found mostly in the counties of Carmarthen, Cardigan, and Pembroke.

Processes

The stages of cloth-making are sorting the material, washing and drying, willying, carding, spinning, weaving, fulling, and finishing. The majority of factories undertake all these processes, except that cloth is often sent away to be finished.

Sorting is a process that even the largest factory cannot do by machinery. Not only are fleeces variable in quality but the same fleece may provide wool of ten different qualities. Even the smallest factory sorts each fleece into five grades. Some of these are sent away to be manufactured, e.g. 'britch', coarse and long wool from the legs, which goes to carpet factories, and 'tailings', short wool from the tails, which

goes to saddlers for stuffing. Wool-sorting is skilled work needing much experience and commanding higher wages than the other factory work. In firms employing eight persons and upwards, one or more men are sorters only; in the smaller factories the sorting is done by a member of the owner's family.

Cleaning. The wool is washed in baskets and spread on racks made of wire netting to dry. As this can only be done in fine weather, most of the factories have installed drying machinery for use when wet.

Willying. The 'willy' is a small machine for disentangling the wool before it enters the carding machine. It has a rotating cylinder studded with large spikes and is driven by water-power. Most factories have a 'willy'.

Carding is the process that sets the fibres all in the same direction, to form the 'slivers' and for interlacing the fibres to form a thick coarse thread called 'condenser'. Every factory has a carding machine and some have two, varying from a primitive type to the latest invention. Much more manual work is required for the primitive sort; for example, the wool has to be weighed on a small balance so that it may be fed evenly to the carder. Then the right quantity must be spread in equal thickness on the feeder. It has only two drums, and hence the yarn is uneven. On the other hand, the latest carding machines have automatic feeders and so many as six drums which produce very fine and even thread. In the old-fashioned factory it takes the whole work of one boy or a girl to feed and empty the carding machine.

Spinning. One or two spinning jacks are to be found, but there is more usually a mule with 60 to 100 spindles. There are very few automatic mules in the factories.

Weaving. There are still a number of hand-looms at these factories, but the majority have power looms for most of the work, with perhaps one large hand-loom for making shawls, blankets, and 'cartheni'.[1]

Fulling. This process is described under 'Fulling Mills' below.[2] Most factories in this group have fulling machinery, but as it is impossible in wet weather to dry the material after fulling, it is not unusual to find large stocks of material left un-fulled until the weather is favourable.

Finishing. This process is also described below.[3] Flannels need less finishing than tweeds or cloth. Most of this is done

[1] See p. 31. [2] See p. 24. [3] See p. 25.

at the factory. *Dyeing* is not done at these factories. Some send a little wool to the big dyers when a special dye is required, but more usually they buy dyed yarn. A few have not the fulling and finishing machinery, and these send their material to a fulling mill, either in Wales or in Scotland. Much of the tweed is sent away to be finished, and blankets are sent away for the raising of the nap.

Factories for Separate Processes

In districts where the whole process of converting the fleece into woven material is not done at the same mill, groups of very small mills and in some places of scattered hand-loom weavers are found, connected one with another for purposes of trade. A single spinning mill may supply wool for a group of hand-loom weavers, and a fulling mill or 'pandy' may do the finishing processes for a number of small mills and individual weavers.

There are three kinds of mills or small factories, viz. carding and spinning factories; weaving factories; fulling mills. There are also the isolated hand-loom weavers. Some mills do more than one of these processes, and the tendency has been towards the composite factory.

Carding and Spinning Mills. When all yarn was spun by hand, weavers were continually short of material. As soon as it became possible to use power for this purpose factories were built which confined themselves to providing yarn for the hand-loom weavers all over the country. A large number of the woollen factories in the country originated in this way. During the present investigation there were found four small 'factories' at least where no weaving was done. They are very small, and generally run by the owner, who is an old man, with one helper. They supply the hand-loom weavers of the surrounding districts in South Cardiganshire, and if the hand-weaving dies out, so will the spinning mills, unless they can develop on other lines.

It was this type of mill that used to supply the miners' wives with yarn for stockings. Later, like the mills in North Wales, they also supplied yarn for the weavers who made the miners' flannel, and later still factories took to making the flannel as well.

These tiny factories make up the farmer's own wool for his own use. They seem to act as agents between the farmers and weavers, being responsible for getting the

farmer's wool woven when they have spun it. There are other small factories which have now installed a power-loom or a hand-loom but which still spin a quantity of yarn for the hand-loom weavers scattered about Cardiganshire and Carmarthenshire.

One or two of the old spinning factories have been taken over entirely by some weaving factory for which all their yarn is now made.

Weaving Factories. There are five factories where only weaving is done; four are in Carmarthenshire and one in Pembrokeshire. Most of them have a small stream alongside, but the water is no longer utilized for power. Oil-engines or steam-engines have been installed. One factory was originally a weaving shed for hand-looms. When power looms were introduced the owner bought one; he still confined himself to weaving until a year or two ago, when a carding machine and spinning mule were introduced. Another which was once a hand-loom shed, introduced power looms and still does nothing but weaving.

The others seem to have started when power was first applied to weaving. They are within easy reach of a woollen factory which at one time did nothing but carding and spinning. One weaving factory has taken over a spinning factory which supplies all its yarn, and each of the others depends almost entirely on a spinning factory near by. Owing to the difficulty of obtaining yarn, the tendency of the weaving factories seems to be towards combining all processes, including dyeing and finishing.

Pandy or Fulling Mills. Many woollen factories still bear the old name 'Pandy', which shows that they have developed on the site of an old fulling mill. This is interesting because water-power was used to work the pandy long before the invention of the spinning jenny and other mechanical devices which helped to bring about the Industrial Revolution.

Fulling is the process of thickening and felting woollen fabrics. Two wooden hammers, called 'fists', are fixed on hinges to an upright post in such a way that they are alternately lifted by the wooden projections fixed to a wheel which is revolved by the water-wheel. On falling they fitted into a hollow known as the stock, on which the cloth was placed to be pounded by the strokes of the hammer. After fulling, the cloth is stretched on a rack some twenty yards long with spikes, or 'tenterhooks,' to be dried and bleached in the open

air. When dry, the cloth is ' teasled ', so as to raise the nap, on a small teasling machine, and shorn, by rotating knives, to give it a smooth surface. After this, it is put between layers of thick cardboard and pressed between iron plates, heated by means of a coal, log, or peat fire.

There are seven such pandies in Wales—six in Cardiganshire and Carmarthenshire, and one in Merionethshire. Most of the owners are old men who work either alone or have one person to help. At one time all the factories used to send their cloth to be finished at these fulling mills, but new fulling machinery has been invented, and installed at many of the larger factories, and now that only the hand-loom weavers and small factories use the old pandies it is usual for one pandy to serve a large district. The pandy in Merionethshire fulls cloth for Anglesey, Carnarvonshire, Denbighshire, and Merionethshire. Those in South Cardiganshire and Carmarthenshire depend mostly on the hand-weavers and a few small factories over the border of Glamorganshire. The work is decreasing, but so long as hand-weaving is common these mills will be wanted. Some of them have replaced the old ' fists ' by new machinery. In North Wales even the small factories are now sending their woollens so far as Scotland to be finished, and up to twenty years ago this was also the practice in South Wales.

Two of these old fulling mills have each installed a loom. When there is not much fulling to be done the owner can turn to the weaving of cloth.

Dyeing used at one time to be done at these mills, either before or after the wool had been woven into cloth. It has often been said that the dyeing and finishing is not well done in North Wales. In 1899 University College, Aberystwyth, applied to the Honourable Company of Cloth Workers, and later to the Drapers' Company, for grants towards dyeing and weaving classes at the College, but they met with no success. The Carmarthenshire branch of the Welsh Industries Association made preparations for establishing a dyeing and finishing factory at Carmarthen, but as support was forthcoming only from 15 out of 160 weavers the scheme was dropped. In 1902 a short course in dyeing and weaving was organized at Aberystwyth College, and was attended by a number of men from the counties of Cardiganshire and Carmarthenshire. It was arranged for the lecturer to tour these counties, giving lectures and demonstrations at various

centres. All the surrounding manufacturers attended, and the classes were a great success and are highly spoken of even to-day, for the men realize the benefit derived from them.

The best tweeds and cloths are still sent to Scotland to be dyed and finished, and if the rural industry is to be developed beyond the supplying of the home demand, it will be necessary to have a centre for dyeing and finishing, or to encourage local enterprise in this important branch of the woollen industry.

Hand-weaving

It has been stated already that some of the smaller country woollen factories have one or two hand-looms on which they generally weave shawls, tweeds, the rugs known as cartheni, and other articles. There are also at least twenty individual hand-weavers to be found in South Cardiganshire and Carmarthenshire. Thirty years ago there were many more, and many of the weavers now working the power looms in the factories were once hand-loom weavers.

These hand-weavers are all old and are no doubt the remnant of hundreds of such who until the last century were scattered all over the country. The weavers exist more or less in groups, with certain facilities for spinning and fulling near at hand: in the Llanrhystyd district there is one; surrounding Lampeter there are six; in the Cothi vale, in North Carmarthenshire, there are two, and so on. They work mostly in conjunction with the spinner and the fuller, where the farmers' own wool is made up.

As to earnings it is difficult to judge, for the prices vary according to the yarn used and the type of material to be made. Workers in South Cardiganshire and North Carmarthenshire have an association which fixes the rate of wages. One man who could weave twenty-four yards in one day was paid at the rate of 5*d.* a yard; but this was for weaving only, and he had first to warp his loom so that his average earnings were much less than would be supposed from this rate. Another, working at 5*d.* a yard, reckoned that he could work and weave a 30-yards piece in two days. This seems to be a fair average; as one of them expressed it: 'One can make a fair living by it, but a man can never get rich at it.'

There is one example where the father and son make flannels and take their wares to the sales at Gowerton, Neath,

&c. They are able to demand a higher price per yard owing to their flannel being heavier and more durable than the machine-made article.

Many big factories employ a hand-weaver for certain purposes. In South Cardiganshire quite a number of weavers are able to make mats or small rugs or carpets. This is work that cannot be done on the power loom as the weaver has to put in the tufts of yarn after each weft. Table-cloths of intricate patterns are also made on hand-looms.

The merits of hand *versus* power-loom weaving have often been discussed. Although the majority of the hand-weavers insist that weaving on a power loom is inferior, it is doubtful whether that is the defect of the loom or of the manufacturer. Some of the best hand-weavers admit that for making flannels and similar plain materials where fineness and uniformity are desired, a power loom properly worked and with the proper kind of yarn will give as good if not better results, for human power is more variable than mechanical power.

The market for the Welsh hand-weaving depends chiefly on the heaviness of the material, for the quality and amount of the yarn used makes it exceedingly durable. Certain materials of intricate pattern will remain to be woven by hand, for though machinery for these is obtainable, it is very elaborate and expensive, and far beyond the reach of the small manufacturer.

Spinning and Weaving as an Art

Apart from those traditional Welsh hand-loom weavers who depend on yarn that has been spun by machine mostly at the local woollen mill, there are two examples where both the spinning and weaving are done by hand. One of the two industries is run by one woman, the other by a married couple and one helper. These people are artists, and it is to this that their success is due, for weaving lends itself to artistic treatment. But the artists are not Welsh, and one of them described the Welsh as being 'rather stupid, with no originality, and not enterprising'.

The woman working alone derives nothing from the locality. She seldom uses wool from the Welsh mountain sheep as it is too coarse. She buys finer wool elsewhere, most of which she spins herself on the wheel, but as demand is so great she has to send a little of it to hand spinners in other areas. She uses vegetable dyes made from plants gathered locally. All

weaving is done on a hand-loom, and then each piece is made up by hand into a garment. She makes skirts, scarves, jackets, caps, and so on. Generally only short lengths are made, the worker having decided beforehand for what garment each one is to be used. Thus she is able to bring out her artistry and to give the touch of originality on which her success no doubt depends. She has no definite market, but is in a position to sell her things to friends and 'West End' purchasers. She does not find that hand-made garments are too expensive, or that machine-made garments are really cheaper. She considers their apparent cheapness to be due to the false values of modern times, for she holds that if the durability and general superiority of hand-made garments is taken into account, they are no more costly in the end.

The experience of the other group is different. They have two spinning wheels and three hand-looms. The wool is bought from all parts of the country, woven in artistic designs, and sold by the piece. They make tweeds and cloth suitable for shooting, golfing, tennis, and other pursuits. In their opinion the chief difficulty with such material is to find a good market for it. Much labour has been expended on the materials, and hence they demand high prices. But with the cheaper imitations now on the market it is difficult to find a market that will make it a profitable employment. They find that it is of no use depending on West End tailors, as they demand a big middle-man's profit. But in this case, too, social advantages have made it possible to trade directly with friends and others of good standing, and hence the enterprise has advantages that would not be found under ordinary circumstances, and any extensive development on these lines amongst rural workers is impossible.

Non-Rural Factories

Before attempting to draw any conclusions it will be well to contrast the non-rural factories with those already described, as they give an idea of the type of factory that deals with the wholesale market, and has now no economic connexion with the neighbourhood in which it has grown up, except that it employs local labour.

At Holywell, Llangollen, Newtown, Llandidlaes, Narberth, Carmarthen, and a few other places, there are factories of this developed type, and there is a group of them at Drefach and Pentrecourt in the Teify Valley. There are also a few in the

Towy Valley and in North-West Carmarthenshire. The actual position is determined by water-supply, still useful for cleaning and fulling but long since discarded as a source of power. The wool is mostly English or foreign of a fine quality, and the chief products are fine flannels. Some firms specialize in large shawls ; some make yarn, which is knitted on the premises into jumpers, coats, or costumes ; one or two specialize in tweeds and suitings. A little Welsh wool is sometimes bought, but there is no direct dealing with the farmers. From fifty to a hundred men and women constitute the usual labour equipment, but some factories of this modern type employ no more than twenty. The business of these mills is considerable in normal times, and they are well able to hold their own in the open market.

Is it possible to determine whether these non-rural factories show the type into which the more primitive factories will normally develop, and what chances there are of their so doing, or whether they are merely archaic remains of an old order, left behind in competition with the surviving 'fittest' ? Or again, are they destined to evolve in some other direction, where there is a place for them in modern economy?

The reason for the survival of the small mills is the varied local needs that they supply from local wool, and unless light railways and motor roads bring the remoter regions of Wales into contact with the outer world and its emporiums, the local home needs will still provide the staple trade of small woollen factories, to which any outside market will be supplementary.

Some of these factories have never got beyond that early stage of economic growth when the products of the farm, no longer spun and woven at home, are taken to be worked up by special craftsmen and then fetched home again for use. It is natural for the farmer to think that his own sheep grow the best wool in the world, and a highland farmer will bring his clip to the factory, all from the same Welsh mountain breed, and expect the owner to convert it into anything he may need—from fine flannel to cloth for a heavy rug or overcoat. It is true that the wool from a single fleece is sorted into five or ten kinds suitable for different purposes, but especially at the larger factories it is not worth while to deal separately with such small quantities of each kind of wool as a single farmer can supply. Thus, it is obvious that most of these mills have reached the next stage in the growth of industrialism,

in which the farmer sells his wool to the mill and buys the materials that he requires.

This system has the same advantages as the first in personal contact, economy of transport, and extreme simplicity and directness of trade dealings, while it gives to the farmer a greater choice of materials and to the manufacturer the opportunity of grading all the wool for use in the products for which its varying qualities are best suited. But it requires more capital, for the factory owner has to keep goods in stock and also to buy more wool, instead of realizing the price of his whole output on completing the work.

Apart from the varying demand from the farms, the factories supply yarn and material to the villagers. Owing to the increased use of cotton goods, this market is smaller than it was, though the factory owner may sometimes hire a stall at the nearest market town in order to enlarge his circle of customers.

In South Wales there is a special market amongst miners for the local Welsh flannels. These are now produced both by the country mills and by the large factories. The mills owe their origin to the mining population which has grown up since the great development of the South Wales iron, coal, and other industries. They have always made grey flannel, which was carried to the periodical sales in the mining area and sold direct to the wearers. A few of the mill owners still visit these sales, held at Neath and elsewhere, in the spring and autumn. It used to be impossible to buy Welsh flannel at the shops, but now the larger factories sell through the shops, where the finer kinds, which are coming into vogue, are also displayed for sale.

The non-rural factories are the only ones which do any considerable trade in the wholesale market, and, considering the types of local wool used in the smaller mills, it seems likely that these will continue to find their chief market in the varied needs of their own neighbourhood, unless, indeed, they develop on industrial lines, buying raw material in the wholesale market ready sorted for their purposes.

Products

The Welsh factories produce flannels, blankets, cloth and yarn, and in some of them shawls, cloth for suits, tweeds and knitting yarn are also made. The rough durable fabric made of the Highland wool, much worn in Anglesey and known as

'Brethin cartre', has unfortunately lost much of its market owing to changes of fashion. The Welsh mountain wool is also made into 'cartheni', a very durable kind of bed-rug which can easily be washed and can be made in any colour; it is used largely in South Wales. The old people know its value and comfort, and it deserves greater popularity. The South Wales factories specialize more in flannels. During the last few years 'jumper' knitting wool has been more in demand than wool for stockings. Reversible quilts require elaborate looms which have been installed only at the larger factories in Carmarthenshire and Merionethshire. Fewer shawls are manufactured to-day than formerly. They come chiefly from Carmarthenshire and Cardiganshire, but most factories have a hand-loom on which they can be made if required. Blankets are made at all the factories. One, which has been taken over by a Yorkshireman, is to be used entirely for blanket manufacture when trade becomes normal.

The Raw Material

The method of sheep-farming has already been described.[1] It is interesting to note that the 'rural type' of factory is found not only on the banks of streams, but at the point where the highlands and the lowlands meet. There are a number of factories on the western edge of the central plateau just as it grades into the coastal lowlands. This situation gives the manufacturer a greater variety of wool, which he can get both from the highland and the lowland breeds of sheep.

With the exception of the industrialized factories, each factory depends almost entirely on its own locality for its wool. A little very fine wool may be bought from England or from abroad to mix with the other or for weaving the finest fabrics. It is usual for a small wool manufacturer to buy the clips of the same farms year after year. But wool is also collected at certain centres, such as Newtown, Bangor, and Llanrhaiadr, and put up for sale, and the larger mills, which means, roughly, those using steam-power, can select the qualities they need. The largest mills of the 'non-rural' type use very little Welsh wool at all, buying their supplies in the open market, because their staple product is fine flannel and needs the finest wool. But the general tendency is to use different qualities and not to restrict the output to any one type of goods.

[1] See Introduction, p. 3.

The most important breeds in Wales are the Welsh mountain sheep, bred originally in Carnarvonshire and Merionethshire; the Kerry Hill breed of the Montgomery hills; and the various breeds of the lowlands, including Southdowns, Shropshires, and cross-breeds of many kinds.

The most prevalent are the Welsh mountain sheep, which graze on the short, wiry grass of the highlands during the summer months, and winter on lowland farms. Though the mutton is excellent, the wool is short and harsh and apt to be full of ' kemp ' or dead fibre. It was this harsh nature which made Welsh wool of little value in the market a few centuries ago, and accounted for the insignificance of the trade in wool. It was made up at the homesteads for personal and household use. It is, however, very durable and excellent for certain purposes, as for ' Brethin cartre ' and ' cartheni '.[1]

The wool is also suitable for tweeds of a rough kind, but for some reason the Welsh have never developed this branch of weaving as the Scotch have done so successfully, with somewhat the same type of wool. Perhaps it is that the Welsh do not appear to have made a success of dyeing. Scottish home-spuns originally won their fame not only through their weaving qualities but from the beautiful colourings that were obtained by primitive methods of vegetable dyeing, with bracken, lichens, sea-weeds, and all kinds of herbs and berries. Beautiful, soft colourings, blended by the weaver's skill, produced harmonious effects of a kind that industrial manufacture did not achieve.[2] The ' finish ' of the Welsh tweeds has also failed to find favour. Perhaps the rough wool does not lend itself to the kind of finish that is common, which is apt to take away the distinctive character of the fabric. However, Welsh tweeds sent to Scotland for dyeing and finishing seem to be sold without difficulty in normal times.

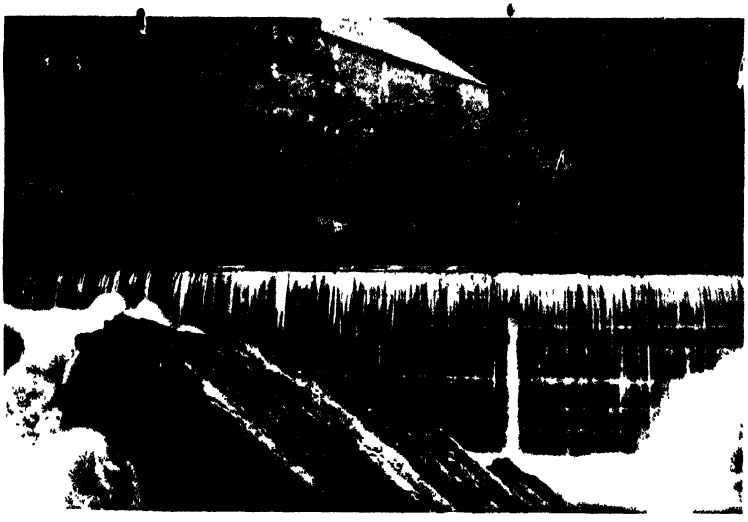
The Kerry Hill sheep of Montgomeryshire provide much finer, softer wool, and no doubt that is why trade with England developed in the Severn Valley.

The lowland wool is considered excellent for blankets, but the name ' Witney ' blanket is more popular with the public, who will give a higher price for any blankets made at the Witney mills, than for the best Welsh blankets.

The small manufacturer generally prefers the lowland wool,

[1] See p. 31, above.

[2] *Report on Rural Industries in the Highlands and Islands of Scotland.*



WEAVING SHED AND POWER DAM

POWER LOOMS

which gives him qualities suitable for flannels and shawls as well as for the coarser, heavier articles. Even the mountain breed, when reared entirely on the lowlands, grows finer and longer wool, with less ' kemp '.

Attempts have been made to improve the highland wool by crossing the Welsh mountain sheep with a fine fleeced variety, such as the Cheviot or Merino, but these have proved unsuccessful, for the hardiness of the breed has been impaired. An experiment is being made in crossing with a small French breed, the Loay sheep, but so far the result is doubtful.

The farmers have far more of the coarser wool to dispose of than the local factories require. The wool is sold to a merchant who sorts it into the six or ten grades that each fleece provides, and that which is not offered for sale at Welsh centres is sold direct to large woollen factories, chiefly in Bradford.

Power

The actual position of the woollen factories has always been determined by the water-supply. Wales is favoured in this way, not only because of its heavy rainfall, but because the streams flow swiftly down the steep sides of its rugged peaks. A stream with such a gradient is a cheap source of power through the agency of a water-wheel. But there are several disadvantages in this system. First, the stream, which is torrential in winter, may almost dry up in a hot summer, and for months there may be no adequate water-supply, and many of the factories have no means of reserving it. Sometimes where the supply is low a small dam is built so that water collected at night may be utilized for power during the day. Again, a small oil or suction gas-engine is sometimes put in to supplement the water-power. Another disadvantage is the irregularity of rate of working. This does not matter much for carding and spinning, but streams are often considered too uneven in force for weaving. The speed can be regulated by means of an engine working simultaneously with the water wheel, and this method sometimes solves both problems, the engine providing power when the water is low.

Of the existing woollen factories, ninety-five depend entirely on local streams for power—that is 60 per cent. of the whole number. These include all the small factories and quite a number of larger ones. The majority of the larger factories have steam-power. Some ten factories have installed

oil- or steam-engines to supplement their water-power, working them either simultaneously or only when the water-power fails.

Not a single factory uses electric power, though some who utilize electricity for lighting, talk of doing so in the near future. An owner of a factory where there was plenty of power from the stream said that the present system of leasing gave him no security of tenure, and that he could not risk the initial expense. With the modern development of electrical machinery, and the possibility of cheap transmission of the current and of storing electric power, it should be possible to harness these mountain streams so as to give a constant and even supply of power. There are already examples of the use of an old mill for supplying a village with electric light.

Associations

There are now two Associations among the workers in wool in the Principality—one is that of the manual workers, and the other, that of the employers.

A *Labourers' Union* was formed as early as 1900 in the Teify Valley. Between the years 1860 and 1900 about twenty woollen mills were erected in the two parishes of Penboyr and Llangeler and their immediate surroundings. These parishes are on the southern side of the Teify river, and constitute the north-western parishes of Carmarthenshire. The years 1860 to 1900 saw great advancement in the woollen trade in this area. Before 1860 there were only about three small factories there. By 1899 there were 260 weavers and the same number of women and children employed in this industry within these two parishes.[1] Judging by these numbers, each factory employed between ten and thirty persons. They did not depend on the immediate neighbourhood for their market; rather they took most of their wares to the mining area of South Wales.

The Labourers' Union formed included all the woollen workers in these parishes. Later, its boundaries were extended so as to include the district of Pencader. A scale of piece-rates was fixed for the different branches of the manufacture and also a daily wage scale. Since then these workers have earned according to this scale, variations being made

[1] See Daniel Jones, *Plwyf Llangeler a Penboyr.*

from time to time to suit the state of the trade. For the rest of Wales there has never been any co-operation among the employees. Consequently their wages varied at each factory, and on the whole they were much more poorly paid.

Since the formation of the *Welsh Textile Manufacturers' Association*, all the factories in Wales have adopted the one rate of pay. This is an association of the owners and employers formed a few years ago. At present it has about 110 members, the approximate number of woollen factories in Wales being 150. The very small mills for separate processes [1] do not belong, as a rule, to the Association, nor do all of the very smallest general factories. Of those employing three persons and upwards approximately 85 per cent. are members.

Before the formation of this association there was a tendency for each manufacturer to try to undersell his neighbour. This was seen both at the market stall and at the factory itself. A manufacturer would lower the prices to such an extent that he found it difficult to make his business pay. If he employed labour outside the family the weekly wage was exceptionally low. The result was that all members of the family had to help in the manufacture. He did not work out methodically how much he should reckon for each worker. Instead he thought that the only means of capturing trade was to lower his prices. One man stated that when in the prime of life and able to help in any part of the manufacture he earned only 10*s.* per week. This state of things did not bring the best men into the industry, and it made the manufacturer's son migrate to other employment when possible.

Since the formation of the Welsh Textile Manufacturers' Association, matters have undergone a change for the better. A scale of wages, both by piece-rate and by daily wage, has been fixed for all branches of the industry, and this scale has been adopted almost everywhere. In Glamorganshire the wages paid are above those fixed by the Association, owing to the competition of other industries in this area. Not only has the Association raised the wages of the labourer, but the employer has benefited greatly by it. Meetings of the members are held periodically and by this means the manufacturers have come into contact with each other. There is no fixed price for the finished articles, but each man works out

[1] See p. 23.

systematically the cost of each and fixes its price accordingly. Thus, by co-operation the owners are able to earn an income that makes it possible for them to pay good wages to their employees, and to allow for a living wage for their families. It has been suggested that if such an association had been formed earlier, a large number of the small factories that have closed during the last thirty years would be working still. Also there would be more young men, including owners' sons, in the trade, and consequently more desire for development. The Association has a warehouse at Penarth, near Cardiff, where each member can send any goods to be sold to the shops. In this manner it is intended to do away with the numbers of middlemen, and to decrease the cost of marketing. The trade depression of the last two years has temporarily upset many of the plans of the Association, but in time it is hoped to provide a better market and in some way or other to advertise Welsh woollen goods.

Conclusion

'The manner in which the woollen industry has unaided held its ground in this area [i.e. the counties of Merioneth, Montgomery, Cardigan, Pembroke, and Carmarthen] affords some reason for hoping that if assisted and encouraged it would in time do much to check the increasing depopulation that is going on in these rural districts.' [1]

Wales has the wool, plenty of water-power, and the labour necessary for the woollen industry. As for the social effects of such an industry on the rural areas, the following passage, quoted from a book describing those two parishes in North-Western Carmarthenshire where the woollen industry has played such an important part during the last seventy years, where moreover the workers have been organized since 1900 in a Labourers' Union, is of interest:

'The last fifty years of expansion and improvement in this industry has influenced all manner of things in these parishes. Smoky and disreputable cottages have disappeared; there is work for every person, and the number of poor is less than in the adjoining parishes. The farmer finds a ready market near at hand for his produce and even better prices than in Carmarthen. This industry was also one reason for the extension of the Great Western Railway to Newcastle-Emlyn.' [2]

[1] D. Lleufer Thomas, *Memorandum on the Woollen Industry of Wales.*
[2] Daniel Jones, *op. cit.*

But new markets are needed, and it is essential for the fabrics to be made attractive to a new class of customer. It is true that the smaller factories will still fulfil the function for which they have always existed, in making fabrics for local use, because they can make up the local wool into a larger variety of articles than bigger factories will undertake to do. But local markets of this kind tend gradually to dwindle, as outside goods and customers penetrate with the extension of transport, providing the local inhabitants with more opportunities of travel and of seeing other ways of living. The industries, therefore, if they do not develop industrially and become 'non-rural' factory enterprises, need to find a market where the distinctly local characteristics of the work have as great a value as they have had in their own neighbourhood. It is through visitors that this market may be found. Attempts are already made to interest tourists and visitors by displaying Welsh tweeds in shops at holiday resorts. Motors are bringing them in numbers to all parts of Wales, and the connexion between motoring and the Welsh climate at once suggests motor rugs and motor wraps as suitable objects to display in shops in tourist centres. Interest in traditional arts is growing. Why should not the tourist be used more systematically to advertise Welsh tweeds, rugs, and scarves? Photographs put up in the hotels, and tours organized to visit a woollen mill or a hand-loom, would stimulate the interest of visitors and lead to orders, and this interest would react on the workers and make them more inclined for enterprise. Small articles, such as scarves, skirt or jumper lengths, caps, stockings, and gloves, could be shown to attract those numerous visitors who do not wish to make a costly purchase, but like to get smaller gifts and mementoes while in holiday mood.

But success can only be attained if the fabrics are pleasing to the eye, however warm and durable they may be, and it is to be regretted that more has not been done on the lines of the experiment at Aberystwyth College for Carmarthenshire described above.[1] With modern taste for bright and beautiful and varied colours, it is clear that better and more original colouring is needed to make Welsh tweeds and rugs more popular. There is no reason why Welsh tweeds should not gain a reputation comparable to those from Harris or Donegal.

At the same time, great care should be taken not to make

[1] See p. 25.

processes too expensive and 'precious' for the general public, for a 'society market' is not a safe one for general workers. It does not seem likely that demand for hand-spun cloth, such as artists make, will expand in Wales, because the finest and softest yarns, such as Shetland, are preferred in art weaving, and because machine-spinning has long been established in Wales.

But quite apart from hand-spinning and the choice of fine, soft wools, artists depend for their effects on the blending of colours on the loom. This applies both to power and to hand-weaving, though the hand-weaver has a very real advantage over the factory weaver in that he can vary his output without additional expense for small quantities. Many artist weavers who do not make home-spuns depend for their effects on their blending of coloured threads. It is undoubtedly in the dyeing of the yarn before it is woven, and not in the dyeing of the woven cloth, that opportunities lie for developing the art of making Welsh woollens.

The fulling and finishing process which is undergone by the Welsh traditional weavers' material tends to make it look identical with the same type of material woven on a power-loom. In such work there is no artistic merit arising from the fact that a hand-loom and not a power-loom has been used. But the process is needed to make it more fleecy, warm and rainproof, and it should be continued. All the more care should be taken to give distinction in the colouring and weaving.

Inquiry and experiment is needed in the properties of local vegetable products for dyeing wool, and the processes and results should be brought to the notice of people in the weaving district. Other methods of dyeing should also be studied. The factory owners might be encouraged to dye, or some central dyeing works might be established. But the development of dyeing as a big-scale industry would probably fail in the purpose of getting distinctive colourings for the Welsh wools. Either dyeing is a big-scale industry producing for the wholesale market, or it is an individual process done for personal tastes. The woollens of Wales do not seem likely at present to be able to supply big local dyeing factories to compete with those already established elsewhere, but small experiments in dyeing would be a stimulus to artistic efforts, and bigger enterprises might follow later if the need arose.

Subsidiary Industries

Shirt-making

The tendency now is for farmers' wives to buy ready-made shirts instead of buying flannel as they used to do to make up at home. Sometimes a little shirt-making is done by a dressmaker or by a widow in a village near a wool factory, mostly for some private order. There are sewing factories connected with some of the woollen factories, and some of them have their own shirt-making department. The smaller woollen mills send flannel to special shirt factories to be made up and returned as shirts. Flannel is also sent to Manchester, Huddersfield, Cardiff, and other towns to be made into shirts.

Shirts are made at the woollen factories of Holywell, Llangollen, Newtown, Llanidloes, and Drefach. At Cardigan and Llandyssul there are shirt factories unconnected with woollen manufacture, except that they depend on local material.

Shirt factories employ from three to fifty girls. More division of labour is possible in the largest factories, but the methods are much the same in all. A number of sewing machines are driven by power, the cutting is generally done by one person, and each girl makes as many shirts as she can and is paid 3*d*. to 3¾*d*. a shirt. Girls can make eighteen to twenty shirts a day, and the earnings vary from 27*s*. to 35*s*. a week.

Out-work. Some factory owners employ out-workers to make shirts, but most of them find it cheaper and more satisfactory to send the flannel to another factory unless they can install machinery themselves. Out-workers are generally engaged in household duties, which make it uncertain whether they can finish their work for the factory in any given time. The prices for making vary from 1*s*. to 1*s*. 6*d*. a shirt, the out-worker using her own machine. The factory sometimes supplies machines, as well as cotton and buttons, and pays from 6½*d*. to 8*d*. a shirt. The usual number made is four or six in a day, but the women do not spend their whole time on the work.

The young girls, as a rule, prefer to work in a factory; but those who are delicate, and the married women who cannot spend regular hours at a factory, prefer out-work.

The demand for ready-made shirts is increasing, and other flannel garments are also made at some of the small factories.

The opinion was expressed that the future of the flannel trade lies in producing ready-made garments, and the employment of girls at woollen factories to make these garments is likely to increase.

Hosiery

The manufacture of hosiery has very little connexion with the woollen mills. A few old women are still to be found who knit stockings by hand for the sake of earning a little money. At most they can knit one stocking in a day, and they charge 2*s.* or 2*s.* 6*d.* for making a pair. As a source of regular employment this system has almost disappeared. There are a number of women and girls scattered over the country, who either depend entirely on stocking knitting or do some in the time that they can spare from domestic work. Each one has a knitting machine, the price of which varies from £10 to £16. All depend on local orders, and as the knitters are scattered the demand is fairly good, as a rule. In a very few cases they supply a local shop. The wool is either brought by the customer, or the knitter provides it. It comes mostly from English firms, the Welsh yarn being too coarse for their machines. Big stockings for men take from one hour to one hour and twenty minutes to make, according to the knitter's skill, and a pair of socks takes from forty minutes to one hour. The prices received are from 1*s.* 3*d.* to 1*s.* 6*d.* for men's stockings, but in one or two cases it was as low as 8*d.* and even 7½*d.* a pair. Socks range from 9*d.* to 1*s.* 3*d.* a pair. A little re-footing is done, the charge varying from 6*d.* to 9*d.* a pair.

A few of the woollen factories in North Wales employ one or two girls for stocking knitting. In such cases the manufacturer supplies the knitting machine and all necessaries, paying the girls between 3*d.* and 5½*d.* each pair. It was reckoned that a girl could make from ten to fourteen pairs a day. In South Wales some woollen manufacturers had knitting machines, but they found great difficulty in securing the labour; 'the girls seem to prefer any other work.'

Hosiery Factories

In 1915 hosiery factories were opened at Bethesda (near Bangor), Talsarn (near Carnarvon), and Blaenau Ffestiniog by the help of the American Relief Fund—money collected in America to relieve some of those who suffered owing to the

war. These three villages are in the slate-mining area of North Wales, and this trade was in an exceedingly bad state at this time. So factories were opened and set up with ordinary knitting machines. Each of these employed from thirty to fifty girls, and it was arranged that wool spun at the local woollen factory should be supplied for the work. Each girl spent a little time learning, and so soon as she could produce a good stocking she was paid at the rate of 3*d.* a pair. She only did the knitting, the work of finishing and pressing the stockings being done by another girl, and by this system she could soon make from twenty to twenty-four pairs a day. The weekly earnings ranged from 25*s.* to 30*s.* During this time the factories worked only for Government orders.

Soon after the end of hostilities the factory at Ffestiniog was closed, whereas the other two have gradually diminished in size, and at present employ about six girls each. It was found impossible with hand-machines to compete with large manufacturers who installed electrically driven machines, but the employment thus supplied for girls in the locality had been a great help both financially and socially, and they would welcome a continuance of the opportunity of it.

At Carmarthen there is a large hosiery factory where a number of girls are employed. At Newtown the knitting of jumpers, scarves, coats, costumes, stockings, and all manner of woollen goods is carried on on a large scale. Each gives employment to a large number of girls, and the districts benefit considerably by these works.

Ready-made Clothing

There is a new type of clothing factory having nothing whatever to do with local traditions except in so far as it is indirectly a substitute for the old workrooms formerly attached to the drapery shops in rural towns. A certain amount of clothing and hats, both for stock and to order, used to be made in these workrooms; the work was done entirely for the customers, and there was no specialization. The girls engaged in it entered as apprentices on leaving school, and after a time they began to be paid, but the earnings were low. In one of these shop workrooms about twenty girls used to be employed. With the establishment of the Trade Boards for fixing wages, employment began to dwindle. The reasons given by the owner were that the scale was far too high for

a rural area; there was no longer any period during which a beginner could learn without being paid, and the rates were 'absurdly unfair'. A learner entering at eighteen years old had to be paid 4½*d.* an hour, whereas a learner of sixteen years old—at a more alert and teachable age—received 3½*d.* an hour to begin with. Thus it was very difficult for a girl over eighteen to get employment in such a business at all. Owing to the variety of the work, it was impossible to apply the piece-rate system by which more allowance could have been made for learners of varied capability. As a consequence, no new learners were taken, and as the employees left the business dwindled. Thus, it has come about that the stock of these shops is now bought ready-made from factories where there is more specialization and economy of labour, but where the employees do not get the all-round experience that the local drapery and millinery workrooms afforded.

Some of these factories are to be found in rural parts of Wales. It is notable that an employer of 100 girls makes no complaint of the Trade Board rates, whereas another employing twenty described them as 'a death-blow to rural industries'. They are economically possible with specialized machinery and somewhat minute division of labour, but not, apparently, in the less well-equipped factory where all-round work is necessary.

The factory employing 100 girls has separate machines for cutting, button-hole stitching, button fastening, and so on, all driven by electricity. It produces ladies' and children's summer frocks and pinafores. It is near a small village and the girls come from the surrounding neighbourhood, but more from the small towns than the country. Most of the village girls go into service on the farms, but the town girls are not willing to do so and are therefore very glad of alternative work. These girls travel to and fro by train. Beginners are paid 15*s.* a week for a time, and when proficient they are put on piece-rates and can earn on an average 30*s.* and sometimes 35*s.* in a week. The whole neighbourhood speaks highly of the establishment, and it appears to be thriving.

Both factories sell in the wholesale market, being independent of their own locality except for labour. No outworkers are employed by either.

None of the clothing factories make use of water-power. It is more important apparently to be near to a railway than to

a suitable supply of water-power. But with the recent increased knowledge of the means of getting electric power from streams, there seems to be a possibility of more decentralization of clothing industries of this type. The products are not so heavy that the transport to and from a station would be a very serious expense. It is interesting to note that most of the factory owners are Lancashire men.

Tape and Lace Making.

There is another example of decentralization of industry from Lancashire into North Wales. A factory, lately erected in a rural area, is specializing in boot-laces, corset-laces, twine, and all kinds of tapes. Cotton and silk only are used, and these are all brought by rail from Lancashire, the finished articles being all sent back to Lancashire, and the whole outfit is owned by a Lancashire man. So far the factory is not fully developed, and the position cannot be judged fairly.

CHAPTER III

WOODLAND INDUSTRIES

WALES as a whole has very few areas where much land is devoted to the growing of timber. What timber there is in the less densely wooded areas is cut down and utilized at the small village workshops for the making of agricultural and household implements. The carpenters and wheelwrights who work in the villages form by far the most important section of woodworkers in Wales. Where there is any quantity of timber to be disposed of it is very seldom used for local manufactures, but is usually taken by rail to other districts. The coal-mining area of South Wales itself is practically devoid of forest, and hence there is a demand, which reaches to all parts of Wales, for wood suitable for pit-props.

The chief woodland areas of Wales are the valleys of the Wye, the Usk, and the Severn. These valleys lead into England to the east, and are in many respects English. It is here that most of the woodland industries, especially the underwood industries, thrive.

CLOGS

Clogs are boots and shoes with wooden soles. The clogs that are worn in Wales are known as 'country' clogs, as distinct from the 'Lancashire' clogs which are lighter. The soles of Welsh clogs are from one-third to half an inch thick. Leather uppers are attached to give them either boot or shoe form. The clogs with high uppers are suitable for gardening, farming and factory work, and also for children's wear, that is, for people who wear them all day or all through the working hours. Those with low uppers are useful for the farm maid who wears them only for dairy and out-door work. Having no fastenings, they can easily be slipped off and changed for lighter shoes when she comes indoors. The clogs have iron rims fastened to the lower edge of the sole, to raise it above ground or water and to protect it from wear.

Clogs are considered the warmest and healthiest type of

foot-wear for muddy and wet districts, but unfortunately there is a certain stigma attaching to their use, for they are regarded as a sign of poverty, and there is a tendency among the poorer classes to-day to substitute inferior boots, which are expensive because they last only a short time, and less healthy because they fail to keep out the wet and cold. In some districts the wearing of clogs is quite exceptional, and in others they are hardly known at all, and are considered the most uncomfortable foot-wear possible. There is no doubt that they must be worn for some little time before they can be used all day without discomfort, but they cause no lack of ease to those who have worn them from childhood. The areas of South Cardiganshire and of North Pembrokeshire around the Teify Valley are the only parts of Wales where a large proportion of men, women, and children still wear clogs. In Carnarvonshire and Anglesey they are worn by farm labourers, miners and others, and they are used in the industrial areas of Flint, Denbighshire, Glamorgan, and Carmarthen, by miners and other industrial workers.

Clog soles may be made of alder, birch, beech, or sycamore. The kind of timber varies with the district and the purpose of the clog. Most clog-makers keep to one particular kind of wood, and are convinced that no other kind is suitable, but a few examples were found of a maker using both alder and birch, or alder and sycamore.

Alder is by far the commonest of the woods used for clog-soles. It grows only in damp places, and is found near running water on marshy land. Owing to the heavy rainfall of Wales alder grows abundantly in some parts, especially in the valleys of central Wales and in the western regions. In Lancashire, where clogs have always been worn extensively, alder is very scarce ; alder from Wales is therefore in great demand, and the Welsh themselves prefer their clog-soles to be made of it. Being a quick-growing tree it is coarse-grained and soft, and therefore easy to cut—a great advantage to the cutter. Moreover, being soft, it gives to the shape of the foot, and hence is comfortable. It is supposed also to possess certain medicinal qualities that are good for the feet, and is still used by some old people as a remedy for foot troubles. Farm servants, men in steel and iron works, and in mines which are not damp, demand alder soles, but it has the disadvantage of absorbing moisture rather freely, and of wearing away in damp districts. Hence it is not suitable

for people working on wet floors and ground. Alder is only cut in the spring or summer, and the blocks must be left to dry for some months before they can be shaped into soles.

Sycamore has a great advantage in that it can be cut at any time of the year and shaped so soon as it is cut.

In the Teify Valley in South Cardiganshire and North Pembrokeshire every village has a clog-maker who makes complete clogs, and here not only the farm servants but also the women and children in the villages wear them. These people will have no other but sycamore, and believe that sycamore is more comfortable for the feet and more durable, being closer grained than alder. These clog-makers generally have little room for storing blocks, nor much capital to buy a large stock of wood annually. Sycamore is used sometimes by one or two village clog-makers in Carnarvonshire. They state that the reason of the extensive use of alder elsewhere is that it is of no value for any other industry and hence is cheap, whereas sycamore, which can be used for many other purposes, is more expensive. In support of this, one man stated that sycamore cost him 1*s.* per foot, whereas alder cost only 3*d.* per foot.

Birch is closer grained and harder and withstands moisture better. Birch clogs are very extensively worn in Yorkshire, but this material is not employed by any clog-block makers in Wales, neither does the village clog-maker ever use birch. The men working in some of the mines in Flintshire demand birch clogs, and these are supplied by the clog-makers who buy the soles already trimmed.

Beech is the wood used when the soles are cut and shaped by machine. The machine often cuts the wood across the grain, and soft wood is thus liable to split, but beech is hard enough to stand cross-cutting. It is cheaper and more plentiful than other timber, and with machine-made soles this is a great asset. When soles are shaped by machinery the upper surface is not so well grooved, and this perhaps is the reason why they are less comfortable than hand-made soles. Most people object to beech on the ground that it does not give with the foot, and thus is uncomfortable.

The only place where beech was found to be used in Wales was at Dolgelly, where for some little time a factory was set up for the making of clog-soles by machinery, but it has now ceased working.

Except in the Teify Valley and for machine-made soles, alder is the timber used. By far the greatest amount of this is cut into clog-blocks where it is felled, and sent in this state to Lancashire. There are a number of Lancashire firms employing men in gangs of four to eight to go round the country making clog-blocks in the woods. The employer buys the timber and arranges for the felling. The alder is bought standing, its measurement being made by the eye only, the purchaser paying so much per foot for the timber. Alder between twenty years and thirty years old and not less than 9 inches in diameter is preferred. After felling, coppice shoots spring up, and in about twenty years a man can cut from the same district again.

Processes of Manufacture

The making of clogs may form either a single industry carried on by the same man or in the same workshop, or its three processes: (1) 'breaking up' or clog-block cutting; (2) sole-making; and (3) seatsman's work, i. e. making and fixing the upper to the soles, may be carried on quite separately by different workers and different firms.

The cutting of clog blocks, chiefly for Lancashire makers, is carried on in many parts of Wales in the woods where alder is found. The industry is distinct from that of the complete clog-maker, and is differently organized. Some cutters are Welshmen working for a Welsh employer who sells to a Lancashire firm; others are master men; others are natives of Lancashire who are sent as journeymen from one plantation to another. Most of the gangs working for Lancashire firms are to be found in Central Wales, in North Cardiganshire, Breconshire, Radnorshire and Montgomeryshire, and a few in Anglesey.

'Breaking-up' or clog-block cutting is a whole-time, but seasonal, industry, which is carried on during the spring and summer months. The breaker-up has to move about from place to place. He may remain in one plantation for any length of time from six months to six years, moving during that time when necessary. He has a little rectangular tent to shelter him from sun or rain, which can easily be moved and carried. It is open at one side, and he stands facing the opening as he works at shaping the blocks. First the wood has to be cross-cut into logs, which are of four lengths according to the four sizes of soles wanted. Since it is much easier

for two men to saw than for one, the cutter usually hires unskilled labour out of his own wages for the sawing, or arranges for another cutter to saw with him.

The logs are then split with an axe into two blocks, or into three if the logs are big enough in diameter and free from knots, and the blocks are roughly trimmed into shape with the axe if too large. The skilled work with the special knife follows. A heavy wooden block about two feet high and three feet wide is used inside the tent, as a kind of bench, and the knife is secured to it by a steel hook. This hook attachment acts as a pivot on which the knife is swung in working. The knife consists of a blade about six inches long and four inches deep, with a steel handle about two and a half feet long in one piece with the blade, bent at an obtuse angle where it joins it. The cutter works the knife with his right hand up and down only, while he holds and moves the clog-block on the wooden stump with his left. The long handle gives considerable leverage, but great skill and strength is required, and as the cutter has to bend low with each stroke, the work is very trying unless learnt in boyhood. Most of the men working for Lancashire firms have used the knife in boyhood in their fathers' workshops while still very young, and they find no difficulty in later life. The shaping of the block is done by turning it about as the knife works up and down, and the shaped blocks are thrown into separate heaps as finished, according to their size. At the end of the day's work the cutter builds them into cubical or conical stacks, in such a way that the air can circulate freely, counting them as he stacks them.[1] Here ends the work of the cutter, for he leaves the stacks drying in the woods, and the employer has to arrange for their transport and sale.

There is a large amount of waste wood both in chopping the logs and in shaping the blocks, especially if the wood is knotty. Sometimes the cutter can dispose of this to his own advantage, and if he is near a town he can sell it at a good price for firewood ; for example, at one place the waste was sold at 6*s*. a ton, the buyer paying 12*s*. a ton for haulage. But often the cutter's work is done in places too inaccessible for him to find any sale for the waste. The money gained by selling the waste was supposed to pay for the man's lodgings while away from home.

[1] See illustrations in vol. i, *Timber and Underwood Industries and Some Village Workshops*, p. 64.

Conditions

Although some cutters are only apprenticed for a year or so, the custom has been for them to go through five to seven years' apprenticeship in all branches of the clog trade, after which they keep to one branch only. Before the war the work was poorly paid, a man having to work very long hours to make a living. During the war prices had risen to 4*s.* and 4*s.* 6*d.* a dozen, and a very good living could be earned. But these prices were not maintained. The usual prices at the time of investigation (1923) were 1*s.* 6*d.* per dozen pairs of mixed sizes, or 1*s.* 2*d.* per dozen for the smallest, to 1*s.* 10*d.* per dozen for the largest. On an average a cutter working about ten hours a day can make twenty-four to thirty dozen pairs of clog-blocks a week, and can earn 35*s.* or 40*s.* apart from the sum he makes by selling the waste wood. A Journeymen's Association, to which all the Lancashire cutters belonged, but only a small proportion of Welsh cutters, compelled an apprenticeship of five to seven years, and fixed the piece rates, but with the slump of late years it has ceased to exist. It was criticized by some of the cutters on the grounds that the master journeyman who employed labour obtained undue advantage by its regulations of prices and apprenticeship.

Distribution

The chief districts for clog-makers are (*a*) in the area to the south-west that includes South Cardiganshire, North Pembrokeshire, and West Carmarthenshire; (*b*) in Carnarvonshire and Anglesey; (*c*) a few in Flintshire and Denbighshire.

In the first district every village cobbler is a clogger as well. He has his clog-blocks at hand, which he shapes and fastens on to old boot uppers. But he tends more and more to buy machine-made soles, which he says are cheaper than his own. The demand has always been a local one, but the hawking of cheap clogs in the market centres is causing a decrease in the outlet for local work.

Where the old system still prevails the clog-maker uses sycamore, which he buys locally, fells, and hauls to his work-yard. As a rule he does all parts of the work himself, but he may employ a helper.

As to the second district, hundreds of clogs were made in Carnarvonshire and Anglesey up to twenty years ago, and sold in all parts of North Wales, and even so far south as

Aberystwyth. In Carnarvon town itself there were six shops in one street, employing from six to nine cloggers each. The shops are still there, but they seldom employ more than one man, and often their clogging is merely the fastening of old leather tops on to machine-made soles. In Pwllheli there are three or four shops which have declined to the same extent, and in Llangefini, which used to be the clogging centre for Anglesey, there are now only three cloggers. At Amlwch the three thousand men who used to be employed in the copper mines were supplied by local cloggers. Up to twenty years ago the chief competition was from Ireland, whose soles were imported and sold at 3*d*. a dozen pairs below the Welsh ones, but to-day it is the machine-made sole that is swamping the local clogger's market.

Alder is always the material used in this district, and the clog-maker buys it in the same way as do the Lancashire manufacturers.[1] Either he sends his men into the woods during the summer months to cut the blocks, or, if he employs no labour, he hauls the timber to his own yard and cuts it himself during the summer. The method of working is the same as that already described, but in these shops the same person cuts the blocks, trims the soles, and often makes and fastens on the uppers as well. Sometimes, however, different craftsmen do the different processes. The sole-maker who fashions the clog block to the shape of the foot uses a stump and knife in the same way as the block cutter.[2] But he has two other knives, one with a slightly concave blade, with which he shapes the upper and lower surfaces of the sole, and another which cuts out the groove all round the sole and heel to which the upper is fastened.

There are from twelve to eighteen sole-makers in this area. The average rate of pay is $7\frac{1}{2}d$. a pair, and as a good craftsman can make about eighteen pairs a day, he can earn rather better wages than the cutter.

The 'seatsman', who may or may not be a sole-maker as well, shapes the uppers and fastens them to the soles. The leather is cut either by hand or by machine, sewn up by machine, shaped on a last with a hot iron, fixed on to the sole with a welting put over the join, and finished with a clasp for fastening, a metal cap to protect the toe from wearing out, and irons underneath the sole. These irons are bought from Bolton and one or two other places.

[1] See p. 47. [2] See p. 48.

Old uppers are fastened on to new soles by many men in these villages who are not cloggers by trade.

The demand for these clogs is decreasing, and comparatively little wholesale trade is carried on nowadays owing to the increased competition of machine-made soles and finished clogs from elsewhere. Most clog-makers have added to their clogging trade a retail business in boots and shoes.

In the third district, Denbigh and Flint, the clog trade was never of such importance as in the others; machine-made soles are fast ousting the hand-made soles, and the number of cloggers is decreasing rapidly.

Prospects

The competition of machine-made clog soles is keeping down the prices. In Lancashire factories are swamping the market with beech clog-blocks, and it is thought that as the machinery is improved, the demand for Welsh clog-blocks will cease. The number of apprentices to the trade is decreasing so fast that there was hardly one found in the whole area investigated, most of the cutters being past the prime of life.

The wearing of clogs has been decreasing for the last fifty years, and the decline is continuing. In the remote districts of Carnarvonshire and the south-western counties, given a local market and easy access to timber and leather, the clog-maker may hold his own for some time to come, but with better means of communication and intercourse, it seems likely that even here he will find it difficult to compete against the machine-made product. It seems unlikely that the demand will be sufficient for factory methods to be employed with any permanent success in remote rural areas. A factory for making clog-soles with machinery was set up at Dolgelly. Here was a well-wooded country, plenty of water for power, and plenty of labour, for the district has not yet resumed normal conditions after the closing down of the gold mines. This factory has now ceased working owing to disagreement as to wages. But there was also much difficulty in getting sufficient demand for the number of soles manufactured. This difficulty might have been overcome with time and advertisement; but in Wales, with the exception of the industrial areas, the demand would not be sufficient for a large factory. Neither can these factories look to Lancashire for their market, where plenty of beech is available.

Cooperage

The work of the cooper includes the making of churns, butter-workers, butter-trims, butter-tubs, milking-pails, cheese-vats, salting-tubs, washing or ' dolly ' tubs, and casks or barrels for storing butter, beer, or cider.

Less then seventy years ago there was a cooper in every village. He used local oak for the tubs, churns and casks, and local willow for hoops to bind them. He supplied the farmers in his own district with all the utensils that they needed in the dairy and for home and local brewing. There was also a market for beer and cider casks. His tools were very simple, consisting mainly of a saw and a cooper's knife.

The cooper's work consists in cutting boards of oak to the required size, placing these in position and binding with hoops, and making and fitting circular lids and bottoms. The old-fashioned churns, which were merely tubs with a churn-staff or plunger that was worked up and down to beat the cream into butter, were made in much the same way as barrels. The cooper also made wash or ' dolly ' tubs, salting-tubs, butter-' hands ' and ' moulds '. These were hand-carved to mark a pattern on the butter.

To-day there are a few village coopers to be found who are either too old to work at all, or who do nothing beyond a few repairs now and then. Even in the market towns there are very few of the old type of cooperages. There are about five small cooperages employing from one to three men, still making dairy utensils for out-of-the-way farms. One of the coopers is in a remote village, but even here the materials are now all brought by rail to the station in the village, and although he supplies all the surrounding district, he has to supplement his income by acting as postman. The other cooperages are in market towns. They have very little machinery and they sell their goods either in their own shops or on a market stall. They retail wooden spoons and other wooden utensils which they do not make.

Not one of these cooperages has an apprentice, but in one shop a son is working with his father. One or two men who were once coopers' apprentices have become carpenters, and another with an artistic bent is now a wood-carver. There are still a few men who are part-time coopers, who work either in local factories on the repair of casks, or they repair casks at home for the butter merchant.

In the Severn Valley cider is still brewed at the farms, and one cooper in a market town supplies the casks and also makes them for a local brewery. He still has plenty of work.

There are three main causes for the decline in this rural industry. The first affects neighbourhoods where communications are good enough for milk to be sent every day to more populated areas. Instead of the surplus milk being made into cheese and butter at the farms, it is taken by rail to factories. There are such factories at Carmarthen, Llandilo, and Haverfordwest in South Wales. Whereas casks used to be bought by the farmers every year and taken filled with surplus butter to the market town to be sold to a merchant from some industrial centre, now they are either made at the cheese and butter factories, or they are bought from merchants who import foreign butter, and are merely repaired at the factory. Brewery, like dairy work, has become concentrated in big industrial areas with the same result, namely, the decline of the local demand for the village cooper's work.

The remoter farmers, being unable to sell their milk in industrial centres, still make a good deal of butter. But wooden pails for milking have given way to the easily cleaned galvanized ones, and the old-fashioned tub churns have been superseded, first by a cubical churn with a revolving wooden fan inside, and later by the ' barrel ' and ' end-over-end ' churn now in common use. All these churns require some iron, and since American oak is preferred as being better seasoned, and iron bands have replaced wooden hoops, none of the material used is produced locally. Few of the old-fashioned coopers ever learnt to make the new churns. They had not the capital to instal the machinery required, the carriage of material from a distance was expensive, and the goods demanded were so different from those which they were accustomed to make, that it is not surprising that the country coopers could not adapt themselves to new conditions.

Prospects

Cooperage as a rural industry is a thing of the past, and when the old men die there will be no one to take their place. Where it survives it is concentrated in districts where breweries and dairy factories create a demand, and it is very unlikely to be developed under new conditions elsewhere.

Turnery

Apart from the chair-leg turnery of Monmouthshire, three men have been found who earn a living by making wooden spoons, bowls, egg-cups, butter-prints, rolling-pins and boards, stools, and tool-handles with the help of a lathe. There are also a few scattered about here and there who use a lathe sometimes and supplement their earnings by a little clog-making or by cultivating a small holding.

The tool-handles are for farm implements and are made of oak found in the western region of Carmarthenshire. The indoor utensils are made of sycamore, which is found in the Teify Valley, where it is also used extensively for clogs. Sycamore does not affect the colour or taste of what is put into the bowls and spoons, and is therefore suitable for kitchen and table utensils.

The lathes are turned by water-power or by an oil engine, and the goods are sold in the market centres.

Prospects

With the increasing use of china, aluminium, and tinware, the demand for wooden utensils has declined very much, and it does not seem likely that this branch of turnery will survive unless it is combined, as it is by one of the turners mentioned above, with tool-handle making. But it is an industry such as would appeal to the artistic visitor or to the lover of 'antique' objects and methods, and it is quite possible that these old-fashioned, turned articles might fetch a remunerative price in the art shops of touring centres as survivals of an interesting local craft, if some enthusiast were to help the turners to find a market. The dangers of such a market are, however, obvious.

Chair-leg Turnery

In the English-speaking districts of the Forest of Dean, that is, in East Monmouthshire and East Breconshire, there used to be numbers of chair-leg turners who worked their lathes in the woods.[1] Treadle lathes were also to be found in many carpenters' shops, where much of the local furniture was made. But the turners have had to abandon

[1] See K. S. Woods. *Rural Industries round Oxford*, Pole-lathe turners in Buckingham, Part 2, ch. 1.

the craft on account of the competition of chair-legs made by steam-saws and power lathes in the factories. The hand-made chair-legs were superior to those turned out in the factories, for the logs were cleft by hand instead of being sawn across the grain of the wood. The cross-cutting of a power saw produces a certain proportion of legs that are liable to snap in use, and when these are painted and varnished the public cannot detect the flaws. Chair manufacturers acknowledge the superiority of hand-cleft legs, but are not willing to pay the extra price.

The valleys of the Usk and Wye in this district form the most densely wooded area in Wales, and the plantations of deciduous wood of various kinds provide the whole of the material for local turneries. There are four of these producing nothing but chair-legs, each employing from four to ten men. Each factory employs also one or two men to make hurdles and barrel-hoops, but the chief trade is in chair-legs. Each employs its own men to fell the timber, and has its own saw-mill for cutting it into suitable pieces for the lathe. Hand-cleaving has long since been supplemented by power sawing. The waste wood from sawing and turning is used to produce power for the lathes and steam for straightening the poles.

A number of lathes are driven by one engine, and the turner's work is to fix a suitable piece of wood into the lathe, mark the pattern on it by means of nails driven into a piece of wood, and then to cut it to shape while it revolves rapidly under power. It needs great strength as well as skill to hold the knife in the right position against the revolving pole. Three years are considered a reasonable time for apprenticeship, but after this there is still much to learn before the turner can make his work profitable. All payment is by piece-rates, depending on the amount the worker is able to turn out. It is difficult to estimate the earnings, for the rates vary with the pattern of the leg and the kinds of wood used. Some men can turn out from two to three hundred legs a day. Although the weekly wages vary, the turners consider that they can earn more than the agricultural labourers and perhaps more than the coal-miners in this district. Before the war the earnings were very low in this industry, and this is believed to be the reason why very few young men learnt the trade. Conditions now are very much improved, and there are a few young apprentices to the trade.

In the Severn Valley large saw-mills have been erected and timber is sawn every year. It is sorted and cut, and much of it goes to the South Welsh mines for pit-props, that which is not suitable being used in local workshops to supply the needs of the farmers. One of these workshops has developed into a turnery where about twenty men are employed. There is not now enough local wood for turnery, and timber is imported through Liverpool. Here are made wooden candlesticks of intricate shapes and old-fashioned designs, legs of tables and chairs, banisters, railings for wooden bedsteads, and a variety of other articles that need turning on the lathe. These are sent to London, Liverpool, and elsewhere, the distance of the market being a great handicap to the trade.

This type of turnery is not carried on in the Wye Valley district mentioned above, because there is a great demand for all timber that is suitable for pit-props in the mines near by.

There are a few big turneries in industrial South Wales making chair and table legs, but no local wood is used, and the industry is in no sense rural.

Furniture Making

A certain amount of furniture is still made at small rural shops, especially in the market towns. Some of the craftsmen still use a little home-grown timber, but most of the material is imported through the ports of Liverpool and Bristol. This timber is already seasoned and can be used immediately. There is still much Welsh oak distributed all over the country, and when locally grown timber is used, it is usually oak. But there seem to be many disadvantages for the maker who uses it. It is very seldom seasoned properly, and it is of small dimensions compared with many of the foreign timbers. Most of the raw material is brought by rail, and it is usual to find the workshop near a railway station.

Very few men follow the processes through from the raw material, and the work consists mostly in assembling parts, such as legs, fittings, and machine-figured borders. There is little machinery, besides a saw, a plane, and sometimes a lathe. A little hand-carving is done sometimes, but the furniture 'maker' finds it cheaper to buy pieces decorated by machinery which he can get from larger firms. A little French polishing is carried on at these workshops.

The industry depends on the local market and the local supply of labour. In the agricultural districts bordering on the South Wales coal-field a great deal of the furniture made in these small workshops is sent into the mining valleys, to people who have migrated from these parts.

Prospects for Turnery and Furniture

The study of rural furniture making leads to the question whether the hand-cleft wood and the traditional skill of the turners might not be turned to account by fostering a demand amongst artistic people and lovers of old patterns and old traditions for country furniture. It has been pointed out [1] that easy communications, which have deprived the country craftsman of his local market by bringing competition almost to his doors, have also brought the tourist to the little art shop where local 'curios' are displayed. Bowls, egg-cups, and ladles of white sycamore, no longer wanted in the kitchen, might please the owner of the country cottage, and it appears likely that the work of the traditional craftsman has only to be known to be appreciated. A good deal might be done by showing not only samples of the work, but photographs of the methods, in the art shops and exhibitions. A cult of country-made objects is no less fantastic than the cult of old furniture, since both appeal to the craft lover's sense of beauty and tradition. Apart from some small development along these lines, the prospects for industrial expansion in rural furniture are not good.

Barrel-Hoops

In the wooded areas of Monmouthshire, near Usk, Monmouth, and Tintern, there are about half a dozen woodworking firms where barrel-hoops and hurdles are made. Two or three of these are also turneries, others are saw-mills or carpentry shops. One firm which used to employ six men making barrel-hoops now employs four. The others each employ only one hooper, and some of the hoopers are hurdle-makers as well. One old man only was found who worked independently of any firm, making hurdles and hoops for old customers, but demand for his trade was decreasing and he had not succeeded in making new connexions.

[1] See Introduction, p. 7.

1. *Heavy Hoops*

Processes

The barrel-hoops made in this district are for a heavy type of dry barrel used in Staffordshire and the Midlands for packing pottery for export, and in Sheffield for metalware for export. They are made of ash, grown locally.

The ash poles are brought to the timber yard, where they are covered to protect them from bark beetles which during the summer will destroy whole stacks of wood if not properly covered. Each pole is split lengthwise with a blunt tool called a froward, into two, three, or four bands according to its diameter. Strips for the barrel-hoops are then shaved off the inner surface of these bands with a knife, each strip being very thin at one edge and about a quarter of an inch thick at the other, so that the hoop may fit tightly on the curved surface of the barrel and hold the staves firm.

In this district the hoops are coiled ready for fixing on the barrel, although the railway rates for bundles of coiled hoops are rather higher than for hoop rods packed straight in bundles. Some potteries using barrels have their own coiling plant, but the work needed is not usually enough to keep their machinery employed, and most firms which pack for export in barrels, prefer to buy their hoops ready coiled.

The coiling is still done in this district by very primitive methods. The cutter builds up a fire with his waste shavings and piles up the bands near the fire to make them warm and pliable. Each band is made still more pliable by continued bending on a wooden frame, or by passing it between two heavy rollers. The wooden frame on which the actual coiling is done consists of four pieces of wood fastened together in the centre and radiating to form eight spokes, as of a wheel—erected more or less horizontally and about three or four feet above the ground. Each spoke has holes pierced at similar intervals, and when coiling the worker puts an upright peg of wood into a hole in each spoke, at the same radius from the centre of the wheel. With his hands he forces one band inside all these pegs, takes it out gently and fixes it with a nail or by tying the coils with a piece of split willow.[1] He then replaces the hoop within the pegs on the wheel, takes

[1] See illustration in vol. i, *Timber and Underwood Industries and some Village Workshops*, p. 102.

the next band, and forces it inside the first hoop, and so on until he has six hoops in one coil. Nine or fourteen such coils make a bundle.

Conditions

The hoop-maker is always paid by piece rates, and before the war his earnings were very low compared with those of the miner working only a few miles away. He received 3*s.* to 3*s.* 6*d.* for shaving and coiling one ' bundle ', and although a strong man could make about eight bundles a week by working ten to twelve hours a day, the usual output was about a bundle a day. Earnings, therefore, were from 18*s.* to 26*s.* a week. The present price is 5*s.* to 6*s.* a bundle, and it still compares rather unfavourably with miners' wages.

In former days there was an apprenticeship of a few years to the woodman's trade, but a man can learn with a few months' practice to turn out barrel-hoops fairly quickly. A hooper can usually turn his hand to hurdle-making or some other woodcraft when trade is slack. To-day there is not a single apprentice to the trade, and most of the hoopers are no longer young.

There is no attempt at any organization amongst the firms or workers ; the reason is given that ' there are too few to form a union '. But since all are in touch with one another and with Monmouth by rail, it ought to be possible for them to meet and to improve the conditions. The difficulty is that purchasers already complain of the increased cost of hoops, which add to their expense of packing. Since, however, there is no foreign competition for this particular kind of strong and large ash hoop, it is likely that firms packing heavy and valuable goods would be willing to pay a remunerative price for the reliable hoops that they need. There should be an understanding with the firms giving the orders that some guarantee would be given as to the quality of the hoops.[1] The trade connexions are of very long standing, and with the plentiful supply of suitable wood there seems no reason why the industry should not continue.

2. *Light Hoops*

Quantities of light hoops of willow used to be sent away from this district up to twenty years ago. These are used

[1] Potters in Staffordshire have indicated the need of organization and education among barrel-hoop makers.

for smaller barrels for ' dry goods ' such as butter and fish. But foreign competition has destroyed the demand for English light hoops. French hazel hoops are used for fish barrels and willow hoops are imported from Holland, where the dykes are planted with willow to bind the soil and to absorb the moisture for safety from flooding by the sea. The willow serves thus a double purpose, and is cheap. Dutch barrels of butter are, moreover, imported into Wales instead of the Irish butter that used to supply work to Monmouthshire hoopers and coopers. Occasionally a local cooper makes hoops for an imported barrel, but since barrel-hoops serve only for a single journey, and are, therefore, considered expensive, boxes and other forms of package are increasingly used for lighter goods. There is, therefore, little likelihood of any future trade in the lighter and weaker barrel-hoops.

Hurdles

There is not much demand for hurdles in Wales. By far the largest part of the land is used for sheep-rearing on a large scale. Sheep walks cover the greater part of the highlands. The farmer needs a few hurdles to form a pen where the sheep can be collected from time to time for washing, dipping, or inspection. Hurdles, being light and portable, are useful for making these enclosures, which are moved from time to time to fresh ground. The hurdles last a few years, so that there is not much work needed to keep up the supply. Farmers, too, are introducing wire netting for many purposes for which they formerly used hurdles.

In some districts hurdles are made by an itinerant woodman, who also makes fencing and gates. The farmer buys the wood, either standing or already cut and sorted, at a plantation within a few miles from his farm, and he pays the woodman by the day. The woodman travels thus from farm to farm. But this system has many disadvantages for him. It is a very uncertain way of earning a livelihood, and much physical discomfort has sometimes to be endured. There is also need for a subsidiary industry during unfavourable weather. One woodman overcomes this difficulty by working on the farms in good weather and making hurdles in his own workshop in bad weather and when there is not much farmwork to be had.

The few hurdles needed at the scattered farms of the country are sometimes made by the local carpenter. He uses

ash or larch according to the kind of wood grown locally, and makes generally no more than a few dozen a year. The price is about 6*s*. each, and the hurdles are of rather a heavy type.

The woodlands of Monmouthshire provide wood for the making of hurdles as well as hoops and chair-legs. All the half-dozen firms making hoops also make hurdles, employing usually the same man for both crafts. The hurdles vary in size. Five-bar cleft ash sheep hurdles are 7 feet long by 4 feet 6 inches high, and six-bar cattle hurdles are 6 feet long and 5 feet 6 inches high. These are made of ash poles, cut when eight or ten years old. They are used for agricultural shows, mostly in England.

The industry seems to have originated in the eastern borders of the Forest of Dean, in Gloucestershire, and to have spread westward. Several Monmouthshire hurdlers are natives of Gloucestershire, and some of them served their apprenticeship in that county.

The men very rarely work in the woods, the poles being carted to the woodyard. The hurdle-maker saws the poles to the required lengths, splits each with a tool called the 'froward', and trims the pole. In making a five-bar hurdle, mortices are bored into each head; the rails are fixed into these mortices; an upright pole is nailed in the middle; and, lastly, two braces are nailed on. All this is done by hand. The mortices are made by boring two separate holes about a quarter of an inch apart and cutting through the narrow division between them with a chisel.

The prices of these hurdles range from 27*s*. per dozen for the four-barred hurdle to 50*s*. per dozen for the cattle-hurdles.

Conditions

The men are paid piece rates, and a man generally makes one hurdle an hour, or about eight or nine hurdles a day. For these he is paid from 1*s*. to 1*s*. 2*d*. each, and thus earns from 8*s*. to 9*s*. a day. Every hurdle-maker has some other branch of woodcraft to supplement the hurdle-making.

The river Vyrnwy, in Montgomeryshire, has been dammed to form the reservoir which supplies Liverpool with water. The hills surrounding this lake are very steep and the rainfall is heavy. These hills were planted with trees, mostly larch and spruce, about a yard apart, some twenty years ago, in order to protect the land from denudation in storms, and to increase the water-supply. The work was done by the

Liverpool Corporation, which owns all the land. During the last few years the thinnings of the trees have been employed for making hurdles.

Eight men are employed in this industry. The holes in the heads are bored and the cross-bars are sawn out by machinery. Hundreds of hurdles are turned out every week, and it is thought that with improvements in the machinery the output could be increased.

The selling price, including delivery, is 48*s*. a dozen (size 6 feet by 4 feet), and the cost of transport to the station of Llanfyllin, nine miles away, is about 3*s*. a dozen.

The hurdles are sold to Lincolnshire and other parts of England, and are much more suitable for a cattle-rearing country, where they take the place of fencing, than for sheep-rearing districts, where light hurdles are preferred.

Packing-Shavings

This is another enterprise undertaken by the Liverpool Corporation at Lake Vyrnwy. The making of packing shavings was begun even more recently than the hurdle-making. A workshop has been erected just below the dam, and all the power for driving the engines is supplied by electricity generated from the 'compensation water' from the lake. This same source provides electric light for the village of Llanwddyn, and demonstrates well the use that may be made of what is often called 'waste water'.

For the making of these shavings large trees, often two feet in diameter, are used. These are cut from the northern slope of the lake, hauled to the workshop, and here sawn into logs on one machine and shaved into long thin strips about half an inch wide on another. About six men are employed. The shavings are used by large firms and shops in London for packing purposes. Here again lack of transport facilities is a great drawback.

Charcoal Burning and Wood Distillery

The old method of obtaining charcoal was to burn timber in the absence of air. Charcoal, which is practically pure carbon, burns at a very much higher temperature than ordinary timber, and will heat a substance to a much higher degree. For this reason charcoal has been used in the smelting of iron.

Wales is not very thickly wooded, but during the seven-

teenth and eighteenth centuries much iron was smelted by means of charcoal. In fact, the actual distribution of iron-smelting works depended on the source of charcoal. Charcoal burning about the end of the seventeenth century decided the actual position of the smelting of iron (blast furnaces) which are still worked near Wrexham.[1]

In South Wales iron was discovered at an early date, but not much progress was made in the smelting of it until the close of the seventeenth century. From then to the middle of the eighteenth century the iron trade developed largely as a result of the immigration of iron-workers from other districts. The hill slopes were covered with forest, and it was the possibility of a good charcoal supply which attracted into South Wales its first iron-workers from the Weald district of Sussex.

The timber was felled and cut up into logs. These were piled up into a regular heap, which was made almost air-tight by covering it with earth. The heap was fired and left to burn until all the timber had been converted into charcoal. In South Wales iron-smelting developed to such an extent that by the middle of the eighteenth century the hills were being cleared of forest and there was an actual shortage of timber for charcoal-making. When the shortage of charcoal became acute the smelters took to mining coal and to using it for the first time in their blast furnaces, and the use of charcoal for smelting ceased.

The same sequence of events followed, no doubt, in the North Wales smelting district.

Charcoal is still used for the smelting and refining of copper and steel, and for disinfecting purposes. Most of the supplies for the large factories to-day is imported from tropical areas, but there is one wood distillery in Wales which still produces charcoal. This wood distillery is situated at Maes-y-cymmer, in the Rhymney Valley. The industry is subsidiary to coal-mining, for it consumes the wood that is useless for pit-props. These have to be straight, free from knots, and of a certain girth. There is much crooked or weak wood which is bought by this firm, and from it naphtha oil, and other products as well as charcoal, are extracted.

By the old method all the gases and their products were lost, and only the charcoal itself was retained. This is a wasteful proceeding, for in many cases the by-products are

[1] See A. N. Palmer, *Old Bersham Iron Works.*

more valuable than the charcoal itself. At Maes-y-cymmer all burning is carried out by modern scientific methods.

A large building with big furnaces and iron retorts has been erected. The timber—first cut into logs—is put into closed retort chambers and all the resultant gases are condensed and purified. When visited the outlook for the industry was very uncertain, and very little distilling was going on. The proximity of coal for fuel is a great advantage, but otherwise its situation in the centre of a coal-mining area is a disadvantage.

A few years ago the same firm decided to set up a distillery at the forest itself instead of near the coal. In the valley of the Cothi river—a tributary of the Towy in North Carmarthenshire—there is a plentiful supply of timber suitable for pit-props. Here a plant was erected for converting the waste wood into charcoal, oils and acids, and it worked for a considerable time. But with bad roads, and a haul of about six miles to the nearest railway station, the cost of the coal necessary for power and heat became excessive, and within a few years the scheme was abandoned. There is a plentiful supply of water-power here, and if this could be used for supplying power and heat, it might still be possible to carry on this industry, and thus supply work for a number of people in a healthy environment.

In Chepstow Park, near Tintern, charcoal burning is still carried on by the old method. The timber in this area all belongs to the Crown. The agents do a little charcoal burning themselves, and also sell the right in some of their woods to charcoal-burners. The timber felled on this land is used for telegraph posts, pit-props, and other purposes according to its size. What is left over is of no use except as fuel. Very often this is left right in the heart of the forest, and the expense of haulage makes it impossible to sell it as firewood, and so, periodically, these odd pieces are gathered, piled up and burnt by the old method, by employees of the Crown.

There are two or three men who make charcoal burning their whole-time occupation, buying the wood in the most inaccessible parts of this forest. It costs them very little, and after turning it into charcoal by the old method, they carry it away in sacks. These burners are continually moving from place to place. They cannot, therefore, set up expensive machinery by which the other products of distillation could be collected. The sole advantage of their method lies in the fact that they can burn the wood without incurring much transport expense.

CHAPTER IV

OSIER-GROWING AND BASKETRY; RUSH-MAT-MAKING, BESOM-MAKING, AND ROPE-MAKING

Osier-Growing

THERE is very little systematic osier-growing in Wales. A description of three beds in the different parts of the country, and an account of the trial beds planted under the auspices of the Carmarthenshire branch of the Welsh Industries Association, will show the difficulties that have to be overcome if osier-growing is to be a commercial success.

There is a bed in the Clwyd valley which was originally planted by a local brewery firm, to supply osiers for the baskets in which bottles were encased. Of late years boxes have been used instead, and although fifteen years ago the bed was bought, cleaned and replanted by a Birmingham firm, they ceased before long to maintain it, and it is now entirely neglected.

A plantation near Welshpool covers about two acres of marshy land lying below the level of the canal close by. It is drained by a deep ditch which surrounds it. It belongs to a basket-maker and is well looked after. He has a few acres of land as well, and keeps four cows, and apart from a few women whom he pays for peeling his rods, he employs no labour. It takes him about three weeks to cut his rods and his crop is about 200 bundles.[1] While cutting, he uproots any stocks that are past their best and puts new setts in their place, thus avoiding the total replanting that would otherwise be necessary every fifteen years or so. His basket-making is described later.[2]

About six acres of the Western Forestry Company's nursery at Haverfordwest are devoted to growing willows for various purposes. Here too a number of baskets are made,[2] and basket willows, mainly *Salix triandra* and *S. viminalis*, are grown. The rods are also sold to basket-makers and to lobster-pot makers in the county, and to firms in London, Nottingham, and elsewhere. The beds are looked after by the men employed generally on nursery work. Nursery

[1] See p. 68.

[2] See p. 69.

plants of the Tree Willow (*Salix alba*, var. *caerulea*), grown for cricket bats, are sold when two or three years old for transplanting.

In Carmarthenshire an interesting scheme for developing the basket industry has been working since 1899. In 1901 basket-making evening classes were organized at Carmarthen, and as there was a lack of local osiers, a few were planted. The classes developed, and in 1906 premises were found for a basket factory and 1,000 baskets are said to have been turned out that year. By 1910 the output had increased to 4,300 baskets. The centre was then moved to Llanelly which was thought to be a better market. In 1912 a grant was secured for growing osiers under the care of the County Council; four small plots of not more than an acre were planted in different places, and in 1916 four more plots were planted. These plots differed widely in soil and altitude, and different kinds of osiers were selected. Their purpose was to discover and demonstrate the conditions under which osier cultivation could be made to succeed in the county.

Unfortunately, the scarcity of labour during the war prevented a fair trial, for the beds could not receive proper care. On inspection by an expert in 1920, three of the beds were discarded as unprofitable, owing to the land being either inaccessible or unsuited to the species of osier that had been planted, or to its not having been properly cultivated. Another had been given up, cattle having destroyed the young stocks. Another plantation was judged to be suitable for growing rods of two to three years' growth, to be cut for chair-legs, tables, and as stacking for hampers. The remaining three beds were bearing good osiers, and in the expert's opinion would be likely to prove commercially successful.

All the labour employed on these plots are regular farm-hands. The rods are cut, sorted, and sent away without being peeled. During the first few years most of the osiers were sold to the basket factory at Llanelly, and when this was abandoned later a market was found for a time in Gloucestershire. At present it is impossible for the farmers to find a market. The Agricultural Committee attempted to find purchasers, only to be informed that the willows were not of the right type, and that the owners were not always careful enough in the growing and cutting. Consequently, even the three beds that were deemed worth keeping in cultivation are being neglected for lack of a market for the osiers,

though from each bed a small number are sometimes sold locally.

The experiment has shown the importance of careful cutting of the rods every year, of keeping the beds free from weeds, and of choosing the best varieties suited to the soil. It has proved that there is much land suitable for osier cultivation, especially in the alluvium of the valleys. It has not proved that osier cultivation can be made a commercial success.

Cultivation, Preparation, and Marketing.

Much hoeing and weeding is required the first year after planting, before the rods have established themselves. The rods are sometimes cut the first year, but very often they are left untouched until the second year. They can be cut as soon as the leaf has fallen or left until the following March. Their butts are immersed in water, and as soon as the sap begins to rise they are ready for peeling.

Women are generally employed to do the peeling. For this they use a 'break'. This is made of a rod of steel bent double, hammered at the bend to form a spring, as in a pair of shears, which causes the two parallel blades to press against the rod as it is pulled between them, their sharpened edges stripping off the peel.[1] The ends are curved outwards for the insertion of the rod. The women work either at home, as at Welshpool, or on the grower's premises, as at the Haverfordwest Nursery. It is tedious work and peelers are difficult to get. They are paid 4*d*. or 5*d*. an hour, or if on piece-rates, 2*s*. per bundle, which measures 36 inches in girth six inches from the butt end of the rods. They can peel about two bundles a day. While peeling the rods are sorted into sizes and then dried. The owner provides the breaks. Peeled willows last longer than unpeeled because moisture may collect inside the bark of the latter; but owing to the great difficulty of finding peelers, all but the best kind of rods are usually sold unpeeled or 'brown'.

The Western Forestry Company is the only firm that sells osiers to any great extent, others being sold locally or utilized by the owner. In 1922 prices near Haverfordwest were 2½*d*. per pound for green and brown (unpeeled); 4*d*. to 5*d*. for large white; 5*d*. to 6*d*. for small white, or on an average

[1] See illustration, *Rural Industries of England and Wales*, vol. ii, p. 46.

£39 per ton. The recorder of these prices [1] is of the opinion that osiers can yield 50 per cent. of profit, allowing for the costs of hoeing, peeling, and marketing, for the growers 'who have the ability to bring their crops out of the initial stages into full bearing'. This takes about three years, but a bed that has been neglected even for a year deteriorates beyond much hope of recovery.

Basketry

Basket-makers can be classified in three groups :

(*a*) Those men whose chief or entire source of income is basket-making.

(*b*) Disabled persons.

(*c*) Labourers who make baskets in their spare time.

Industrial Basket-Makers.

The osier-growers mentioned above who make a success of the beds are also basket-makers. The man at Welshpool uses most of the 200 bundles that he gets from his two-acre plot for baskets made entirely for a local market. These include shopping baskets, farm baskets, laundry baskets, and butter baskets. The large, shallow baskets for carrying butter sell at 4*s*. each. He reckons the cost of each basket, including the labour of peeling, cost of material, and a share of rent, to be about 2*s*., so that he gets 2*s*. a basket for his work. Most of his goods are sold on wholesale terms to local fruiterers and ironmongers, but he describes the trade as a dying one which does not pay.

At Haverfordwest one of the men working on the osier beds makes a few baskets in bad weather and at odd times.

In South Pembrokeshire there are two brothers, sons of an English osier-grower and basket-maker, who are making baskets in different districts. The father came to this part of the country to plant osiers on a local estate. These men grow a few osiers in their own gardens but import most of their material from England. They make baskets and wicker work of all sorts, including chairs, trunks, and lobster-pots. But the local demand is very small, and the transport of material from the growers and of products to market swallows up a large part of their takings. In their opinion it is necessary to have local osier beds and a good local market to

[1] Edward Bagley, M.A., *The Culture of Commercial Willows.*

OSIER STRIPPING

LOCAL BASKETS

make the industry a profitable one. They also think that the failure of Welsh osier beds is due to the ignorance of the farmers as to the way in which they should be looked after. Unsuitable kinds are planted, they are not planted correctly, nor looked after when growing. 'The Welsh', they say, 'have never made a success of osier growing.'

Individual basket-makers are often found in the larger market towns. As a rule they are Englishmen who learnt their trade from fathers in an English osier-growing district, and settled in Wales because of the market. They buy rods directly from relatives in England, make the kind of baskets used in the locality, and hire a stall in the market-place to sell their goods direct to the customer. By this means they avoid all middleman's profits and are able to make a fair living. It takes about three-quarters of an hour to make a small shopping basket, the selling price of which is 2*s.*, and reckoning the cost of material as 1*s.*, they are able to earn about 1*s.* an hour.

Disabled Basket-Makers and the Blind.

After a period of one to two years at a Government training centre the disabled ex-service men took up their trade in their own homes, care being taken that only one man settled in any neighbourhood. These men bought their willows from big firms in London. They depended entirely on a local market. During the first few months every household would buy a basket or two. These were strong, and after the village and district had been supplied the demand naturally stopped. The men then approached the retail shops in the nearest town, but here they met the competition of cheap imported baskets, and the shopkeepers were unwilling to stock a quantity of local baskets. Thus it has happened that several of the men have been obliged to leave the trade and to find other employment. It has been said that the men themselves are partly to blame; that they were taught to make baskets of all kinds and to make and re-seat chairs as well. But the demand of a rural district is very limited, and even with all these branches of the trade it has proved only temporary.

Most of the men classed under 'disabled persons' are blind, and have been taught their craft at one of the blind institutions. The blind institution supplies the raw material, and the baskets that the workers are unable to sell locally

it puts up for sale at its annual exhibition. The craft gives to the blind, if not a good income, at least an occupation which is profitable both to themselves and to the community.

Spare-time Basket-Makers.

A labourer who makes baskets in his spare-time is to be found in nearly every agricultural district. A farm labourer living in the village, a small farmer, a man who works on the road, the postman, mole-catcher, quarrymen, and old men who are past regular work, are often basket-makers at times. Some of these grow a few osiers in their gardens, but they mostly depend on cuttings from the hedges and the woods where hazel and willow may be found. The farmers generally allow them to cut these rods so long as they do no damage. Not one of these men has served any regular apprenticeship, but some have picked up their trade casually and a few have learnt it from their fathers who were basket-makers. They can make shopping baskets and big rough baskets for use on the farms. These baskets are used for feeding cattle, and have different names in different districts, such as 'cawell', or 'lippe'. Hazel withies are used for the framework and willow is plaited round them. The baskets vary somewhat in shape in the various districts, but are usually oval. The framework is made of six or ten fairly thick rods nailed to a rim of hazel, in and out of which lighter rods or split hazel withies are twisted. A space is left under the rim at each end so that it forms a handle.[1] Similar baskets are used for carrying potatoes and were at one time used for peat.

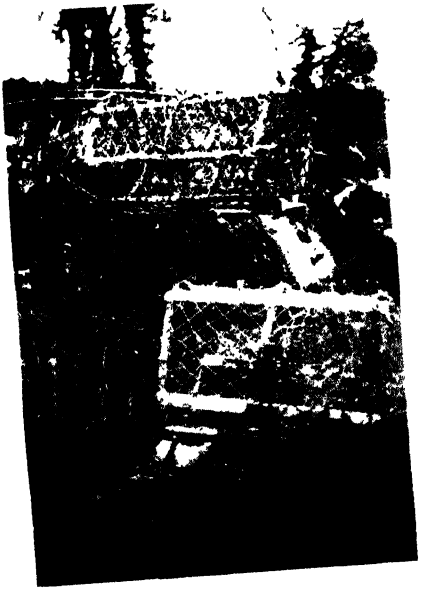
The baskets are sold direct to the farmers, and many an old labourer earns by this means a few extra shillings a week.

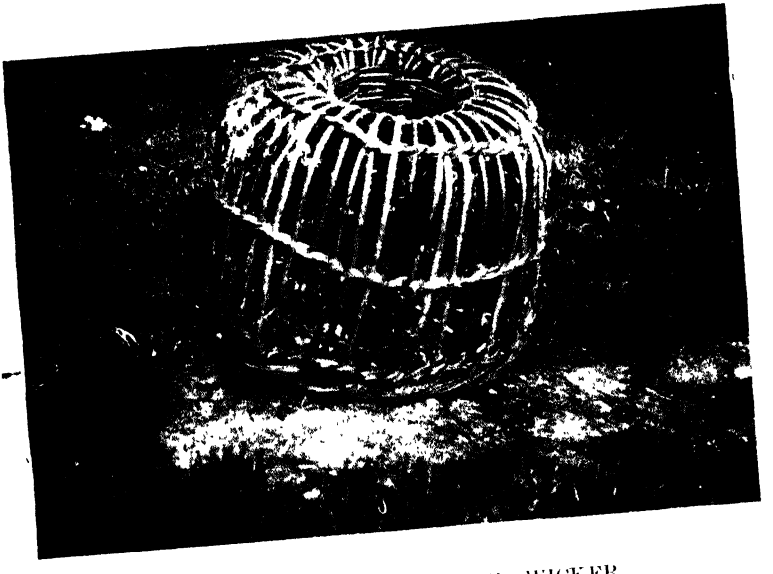
In the Lleyn peninsula, Carnarvonshire, the making of these baskets is an itinerant occupation for some old men. The farmer gathers and provides the material, the old man stays at the farm, and is paid a few shillings and given his keep. This system is rapidly disappearing.

LOBSTER-POTS

Two special branches of the basket trade have considerable local interest, namely lobster-pots and coracles, which are

[1] Cf. Oak Scuttles in Shropshire. See *Rural Industries of England and Wales*, vol. ii, p. 58.





LOBSTER-POTS WIRE AND WICKER

made by fishermen for use in their own trade, in the seaside or river side villages where they live.

The chief districts for lobster fishing are on the coasts of Anglesey, Lleyn, and Pembrokeshire. At each little bay or inlet are fishermen who sometimes farm a few acres of land adjoining the shore. They fish at all seasons of the year if the weather is favourable, and in bad weather they spend their time mending nets and making lobster-pots. The season for lobster fishing lasts from April to October. The pots are hung on long ropes with small pieces of cork along them and a big piece at the end to float above the surface and show the position of the pots. These lie a few feet above the rocky floor and the fishermen pull them up each day to empty and re-bait them. It is noteworthy that there is a difference in the shape of pots made at small inlets only a few miles apart. By land there is little communication, and these small inlets are very much isolated one from another.

Lobster-pots are usually made of willow. In some places the fishermen have to gather their willows from the hedges. If there is a small willow plantation in the neighbourhood it is usual for the fishermen to have permission to cut and gather what they require. Sometimes they pay a trifle for this right, but at other times the owner has no use for the willows and willingly allows these men to use them. In Pembrokeshire some of the fishermen buy their willow from plantations, such as that at Haverfordwest. These rods are never peeled but simply plaited to the shape required.

Some pots are made of wire, but these soon rust in the sea and do not last so long as the wicker ones. For cylindrical shaped pots ordinary wire netting is used. But wire and wire netting are expensive, and willow, if gathered locally, costs comparatively little. A wicker pot will last several seasons unless destroyed in a storm.

The most usual shape is that of a bee-hive, and the pot stands $2\frac{1}{2}$–3 feet high at the centre, on a base 2 or 3 feet wide, the rods being bent inwards to form a cylindrical passage about 6 inches wide from the dome to the middle of the pot. The fisherman begins at the bottom of this cylinder. He starts with eight to twelve thick rods as uprights, fixing these in position by a plait about two inches from the bottom, the two-inch spikes being left to make it more difficult for a lobster to withdraw when once he has entered the pot. As he gets to the top of this cylinder, the maker adds more rods and

continues to plait in and out of them outwards and downwards until he has made a dome two to three feet wide. He then bends the rods perpendicularly to build the walls, turning them in to the centre when he has reached the floor.

Most of the fishermen work independently, making the pots in spare hours, but sometimes a gang of six or eight are employed by one person, generally in the early spring.

A fisherman is sometimes to be found who makes a speciality of this work and sells pots to the others. In one village a basket-maker had added the making of these pots to his other trade. One employer of about six fishermen buys all his pots from Cornwall because he finds the Cornish pots a better shape than any that his men can make.

The demand for lobster-pots is not sufficient for a man to find full employment at this trade, but it is a useful occupation for the fishermen, and would be worth the attention of a seaside basket-maker.

Coracles

The coracles still in use for fishing on the Welsh rivers do not vary very much, probably, from the boats of the ancient Britons, made of 'wattle', like their huts, and covered with skins stretched tightly across the wicker or hazel framework. The modern covering is tarred calico or canvas, but the framework has a history of centuries behind it.

The coracle is known in Welsh as 'corwgl' or 'corwg'. A scene near Carmarthen was described by Evans in 1804 as 'now pleasingly diversified by the numerous coracles that were spread by pairs in every direction to meet the fish [salmon] with their trawls on the turning tide'.

'These boats', he writes, 'are formed of wicker work. They are about five feet long and four feet broad, tapering to a point at the stern, and covered and secured with tarred canvas. Indeed the British appear to have been very early initiated in the art of wicker work, and baskets, though used by the Romans, appear of British or Celtic origin.'[1]

To-day, rows of seven or eight coracles may be seen upside down drying on wooden frames by the roadside in the villages that border the Towy above Carmarthen, the Teify, between Cardigan and Lampeter, and the Dee, near Llangollen. There are a few on the river Wye, but elsewhere in Wales they are unknown.

[1] *Tours in South Wales*, 1804.

CORACLES ON THE TEIFI

In the small villages along these rivers many earn their whole living by fishing. The salmon that they catch are sold to merchants who travel about from one village to another every day during the spring and summer to collect and dispatch them by rail to the big towns. Every fisherman has his coracle, which is made by himself or by some neighbouring fisherman more skilful than he.

The coracles are very light, weighing from seven to fifteen pounds. This is a great advantage, for the fishermen carry them a couple of miles up stream before putting them on the water and then float down stream. They are so built that they can be floated in very shallow water. They are about 6 feet long and from $3\frac{1}{2}$ to 4 feet wide. There is a flat bottom about 4 feet square, and the sides of the boat are upright, and at right angles to the wall at the broad stern. At the prow the boat tapers to a point, the floor being gradually curved upwards to the top level. The coracle is from 1 foot to 18 inches deep at the stern and seat.

The framework is made of nine bands of ash each measuring 6 feet 8 inches long, and across these are put nine ribs measuring 5 feet 3 inches long. The wood is split out with a froward and a knife, to give bands an inch wide and about a quarter of an inch thick. This is done by a spokeshave,[1] the man holding the rod on the bench. The bands are woven into position with willow or hazel withies, each about 9 feet long. Hazel is most commonly used, the rods being peeled, and then soaked in the river for a day or two before use. The boat is made on the ground, the lengthwise ash-rods being first placed in position parallel to one another and 5 or 6 inches apart. Two of the ribs are pushed at each side through holes bored in the seat of the coracle, so as to hold it in position, and a number of sticks reaching from the back of the seat to the bottom of the boat, form a basket in which to put the fish. A leather strap is fixed to the seat to enable the man to carry the boat on his back.

The framework is left in the sun for a day or two to dry, after which it is covered with stout calico or with canvas, and is then tarred all over to make it waterproof. It takes about 5 yards of calico to cover the framework, and this represents about two hours work for a skilled man.

A complete coracle costs about £4. 10*s*. Some fishermen are more skilled than others in the work. Their forefathers

[1] See Oak Scuttle-Making. *Rural Industries of England*, vol. ii, p. 58.

have been fishermen and coracle-makers for untold generations. As with lobster-pots, it is the custom for these skilful boat-builders to be employed by less skilful fishermen, who collect and purchase the material, paying them for their labour only. Ash and willow can often be had cheaply from local plantations and hedges. At Monmouth it is the hoop-maker who supplies the hazel for coracles.

Salmon fishing is a very profitable occupation in this district, and a man who combines fishing with coracle-making and netting, as is done in some districts, has his time fully and profitably employed.

Prospects for the Basketry Trades

Basket-making and osier-growing supplies an example of a very old industry intimately connected with another industry in which its products are used. Farmers, fishermen, and farm-labourers still maintain their inherited skill in the ancient craft of basketry, and make articles that they need in their work. Here and there some special degree of skill in the work has resulted in specialization by one or other of them who supplies the rest, but there is no systematic sale to outsiders. The material is not specially produced, but is found in the hedges and plantations around. Another branch of basketry is that found in the market towns, where an immigrant from an osier-growing district has settled to find a market for his work. These men have served an apprenticeship in basket-making and have had experience of scientific osier-growing. Thus, they either grow what is suitable for their trade or they know where to procure it. There is little attempt at wholesale selling, and none at production for any distant market.

Experiments, either to establish disabled men in this trade, or to develop basketry and osier-growing by means of classes and experimental cultivation, have not proved successful. The reason seems to be that except for the special kinds of basketry wanted and made locally, the competition of imported baskets, chiefly from Holland, is severely felt, for these are brought into all the market towns and sold at a low price.

Where the osier trade has expanded for a while, it has been for some special purpose, for example, the existence of a local brewery wanting wicker cases. The only growers who have found it worth their while to produce osiers of good quality are men who know what they want for their basketry.

The skilled growers find a sale for a few of the finest quality of osiers outside Wales. For others, the demand has not been sufficient to induce them to devote the time and trouble that is necessary for establishing and looking after good osier plantations.

The only conditions on which a successful expansion of basketry can be made, seem to be: (1) skill in choosing, planting, caring for and cutting osiers; and (2) some special market in which foreign competition, and the competition of substitutes for basket-work, is not likely to interfere for a long time with the trade.

On the other hand, it has been shown that there is plenty of land in Wales suitable for growing osiers, and if Dutch baskets can bear the cost of transport not only overseas, but on the railways to all parts of England and Wales, perhaps under more favourable conditions of exchange, a market for home-made baskets may again be found. But there is not much fruit grown in Wales and there seem to be few other basket-using industries.

Rush-Mats

The whole of the westward-facing coast of Anglesey, stretching from Holyhead to the Menai Straits, feels the onslaught of the south-west winds during the greater part of the year. This wind causes strong tidal waves, which deposit the sand-dunes, in Welsh called 'twyni', which extend along the whole length of this coast, being more abundant near the villages of Aberffraw, Rhosneigr, and in particular around Newborough. The onshore salt winds and the sandy soil prevent the growth of ordinary grass and trees, instead of which grows an abundance of the sea-reed known as *ammosphila arundinacea* (mar-hesg).

The land near Newborough is at a very low level. It had been the custom to forbid the cutting of the 'mareske' rush within two miles of the borough, so as to give some protection from the sea,[1] but there are records of a stretch of 186 acres of land being covered by sand in an inrush of the sea in 1331.

About 1810 the sea encroached over Malldreath Marsh, near Newborough, and it was decided to build an embankment to shelter about 3,000 acres. But the embankment was never finished, and to this day the danger is not abated. In

[1] E. A. Lewis, *The Mediaeval Boroughs of Snowdonia*, from Parliamentary Papers, 1835, vol. xxxi.

1835, the sea-rushes were turned to account in the local mat, net, and rope-making industry. Although there is no record of these industries here in earlier times, yet grasses of this kind appear to have been used in industry from very early times.

A writer describes Newborough in 1841 as 'the most miserable spot in Anglesey'.[1] It is an old village with a few hundred inhabitants, lying near fairly good agricultural land where the men worked for miserably low pay while the women eked out their wages by following their own mat-making craft. There is no doubt that the village was until recently in a very poor and backward state, but recent events afford a stimulating example of what can be done by local energy and co-operation.

The industry does not extend beyond the particular village, and the reason commonly given is that it requires traditional skill, which is either hereditary, or acquired in early childhood, and that a girl coming into the village older than 14 years can never learn to make the mats so quickly or as well as the native. But this is not the universal belief, for others say that any one can acquire proficiency who is prepared to persevere.

The yearly cutting of the grass has been carried on for so long by each family that now every woman goes to her own particular area of the sand-dune and claims it as her own property from which no one else is allowed to cut any sea-reed.

The reeds are cut with a scythe about the end of July and the beginning of August. The crop is then treated just in the same way as hay; it is gathered into bunches, and left out to dry until crisp. This takes about a month in normal weather, and it is then brought into the house. Each woman thus provides herself with enough material for her own use, but some of the older women are unable to gather their own raw material, and buy their reed in bunches from Aberffraw, paying about 1*s.* for each bundle. Except in August the women are to be seen making these mats at all times of the year. In summer some of the younger girls form into groups of half-a-dozen, and go to work together in some empty house, thus keeping their homes tidy. As most of the houses have only one living room home work is very inconvenient when the house is occupied by a large family, and by meeting together the work is less tedious for the young girls. The

[1] Lewis, *op. cit.*

wives are not able to leave the house, and they prefer to work at home.

The grass is two or three feet long. To plait it six or seven straws of the same size are taken, and by knocking the bunch against the knee the worker gets them in order for plaiting. There are about six of these bunches in each plait and the width of the plait is about four inches. All the plaiting is done by the right hand; the left putting in the new bunches when the old strand is becoming thin, and keeping the plait in position. This method keeps the right edge always smooth, whereas the left edge, where the new bunches are joined in, is rough. A leather strap fastened to the ceiling forms a loop to support the plait. When long enough the plaited end is weighted down by a poker or some such object, or kept in position by the foot. In plaiting, the worker is seated, and has the work about level with her face.

Until a few years ago only thatching-mats and grass-ropes were made. The thatching-mats were used for throwing over haystacks until the farmer found time to thatch them. The building of haysheds with zinc or corrugated iron roofs has naturally decreased the demand for these mats. The makers still hold that thatching keeps the hay in better condition because it allows the sweat to evaporate into the air, whereas in a zinc-roofed shed the moisture condenses on the zinc and falls back again on the hay.

These 'thatching-mats' are about nine feet by three feet in size. The worker plaits about eighty yards in one long plait four inches wide. With a kind of sacking-needle and a thread made by twisting together three or four grasses, the worker joins the plait, until it forms nine lengths sewn edge to edge making a total width of three feet and length of nine feet.

Grass-ropes are made from this sea-reed. The grass is twisted by hand, putting in a certain quantity of straw varying according to the size and purpose of the rope. Grass-rope is used for packing furniture and other objects with polished surfaces to protect them from being damaged; for fragile goods such as glassware, pottery and stoneware, for covering barbed wire when being transported, and for many purposes on the farm itself. It is also used for other transport purposes, the chief market for ropes made here being the railway company.

On the Continent large quantities of straw-rope are made

annually, but for this there is a special type of spinning-machine. The smaller machines are hand-operated and only make short lengths of rope, but others can be adapted for power and are capable of twisting long lengths of rope in very short time. The introduction of such machinery into this industry would be a great advantage, and the Welsh Mat-makers' Association, which has already done such good work for the industry, might assist in this development.

These spinning-machines can also be used for making rush-mats. The rush is spun into ropes and the ropes are then made up into a flat coil. The coiled mats would not be useful for thatching but for household purposes, and as it is likely that they would cost much less than those at present made from coco-nut fibre, the demand for them would probably spread.

Since the founding of the Newborough Mat-Makers' Association, Ltd., horticultural mats have been made. These are about twelve feet by four feet in dimension, very durable and practically frost-proof, and their good qualities are recognized by large firms of seedsmen who order a few hundred of them every year.

Strawberry-mats have been added recently. These are, as a rule, about thirty feet long and twenty inches wide, and are used for placing on the beds just before the fruit begins to ripen. They take the place of straw or chaff, and are believed by those who have used them to be economical. They are very easily put down; slugs cannot travel over them; they keep the fruit clean, and weeds will not grow through them. The President of the Association has reported them, if carefully dried and put away directly they are taken off the bed, to be almost as good as new after four seasons' use.

A few mats for wall-hangings have been plaited here. But there is great difficulty in getting the inhabitants to make these to exact measurements, and, as a rule, they prefer making other mats where a few inches one way or another do not matter. Grass-baskets or mats suitable for transporting game, &c., are made. Among other articles are mats for table use, plaited floor-mats, foot-stools, and fancy baskets.

Markets

In the old days, before the forming of the Newborough Mat-Makers' Association, thatching-mats and grass-ropes were almost the only products. There was no co-operation among the makers, and all trade was done by barter. Each

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worker made her purchases at the grocer's or the butcher's shop, giving the shopkeeper so many mats in payment. These the shopkeeper stored until local merchants came round in early summer to buy them. The merchants took the mats to the fairs held in July at Criccieth and Pwllheli, and here the farmers would buy their annual stock of mats. As a rule, the worker was given food to the value of 1*s.* 10*d.* for each mat and the shopkeeper sold them for about 3*s.* Thus the shopkeeper made a profit both on the mats and on the food given in exchange to the mat-maker. If the worker had a little stock of money she paid for her provisions in money and kept her mats to sell to the merchant direct, thus realizing the profit that would otherwise go to the shopkeeper. But few had the money to do this.

The grass-ropes which were sold mostly to the railway company were also very poorly paid for. Thus the women, many of whom were entirely dependent on this source of income, found it very difficult to eke out a living.

The need for improvement was realized a few years ago, and an association called the 'Newborough Mat-Makers' Association, Ltd.' was formed. Each mat-maker can become a member on the payment of a few shillings. The association has a secretary, a depot at the village for storing the mats, and a woman to look after the depot. Members take their mats to the depot and are paid 3*s.* for each. The barter trade with the shops is thus done away with. No mat-maker is compelled to sell through the depot. Some still store their mats until the merchant comes round, and in this way in some seasons they get 4*s.* 6*d.* or 5*s.* each for the mats, but, as a rule, they are brought to the depot, often at the rate of fifty mats per week, and every one of these is paid for on delivery. One old woman of 70 made fourteen dozen such mats in 1922, and for most of these she received 5*s.* each from the local merchant. These merchants still take their stock to the annual fairs, but the Association usually deals direct with customers by post.

The Association has done, and is doing, a great deal of advertising and is finding markets for other articles as well as thatching-mats, but the latter trade is the biggest. The conditions in the industry have improved very materially since the formation of this co-operative body, and it is now a commercial success. In fact, it has reacted very healthily upon the whole atmosphere of the village.

Besoms

Rush-made

Near the villages of Valley, Rhosneigr, and Aberffraw, the sea-reed is used for making besoms. It is cut with a scythe during the early part of August, and is left to dry and become crisp in the open. As a rule, each person harvests his own sea-reed, but at Aberffraw it is possible to buy it at the price of 1*s.* a bundle.

The besom-maker buys wood for making the broom-stick, and strong cord for fastening on the reeds. He has no tools, and makes the besom by tying a bunch of reeds round its middle, the stick being previously inserted for about a foot's length, then bending the straw downward from the bond to give it a double thickness, and binding it again. The reeds are between two and three feet long, and tied in this way the tuft measures about one foot, and the three-foot handle projects two feet from it. A few minutes only are required for the task, and a man can make many dozen in a day.

There is no hired labour in this trade, neither is it a full time task for any one. The makers live near the sand-dunes and are engaged in a variety of other work. For example, one man works on the road and makes besoms at night, and on Saturdays; another is a hawker who makes besoms at odd times and when trade is slack.

Besoms are sold directly to the customer at three pence each, or else taken into inland villages where the ironmonger retails them at the same price. They are not so useful as birch besoms for outdoor sweeping, as the straw bends more easily, but they are very useful for dusting and less heavy work. They are in general demand for whitewashing walls, for, however good a brush may be it is soon spoilt when dipped in lime. These are so cheap that they can be discarded without material loss.

This type of besom is hardly known outside Anglesey. As the mats made from the same sea-reed have been brought to the notice of the public with good results by the help of the Newborough Mat-Making Association, Ltd., so it would be a good thing if the reed besoms could be made more widely known.

Heather-made

Much of the high land in Wales produces very little except heather, and is of low value for agriculture. The usual

method of treating heath land resembles that of other parts of Britain; periodical burnings are resorted to, in order to give a better chance for the growth of rough grass.' To the farmer and the gamekeeper alike, heather is a waste product entailing the expense of burning, and though the farmer uses it occasionally as bedding for his horses and cattle, it has very little economic value. It can, however, be employed for making besoms, for which there is a continual demand.

Heather-besoms are made mostly by hand, and besom-making has been taken up by many a farm-labourer, or other workman living in the small villages among the highlands. These men are given permission to cut and gather the heather during the summer months. For this they sometimes pay a small fee, and their work benefits the farmer, who is saved the time and labour involved in burning. The besoms are made by hand during the long winter evenings or in spare time. A bundle of heather is pressed together and tied with strips of split willow, and the broom-stick is then pushed into it. As in the case of rush-besoms, it is never regarded as a full-time job.

There are one or two examples of besom-making on a larger scale. The heather is gathered locally, and the only tools required are an iron press worked with the foot, a hatchet, and a knife. The bunch of twigs is consolidated by the aid of the press, a stick is inserted, and the whole is fastened with cane or split-hazel.

With the raw material at hand, the great necessity is a good market. The demand within these small areas is not sufficient to keep one man employed, so that the market must be sought outside. These heather-besoms are used at the shipbuilding yards and ports, and for North Wales, Liverpool is a good market. During the war the demand in one instance was as much as three men could cope with, but with the trade depression in 1921 this ceased.

The ease of transport is a great item with such a trade. If cane is used for binding the bunch of twigs, it has to be brought by rail to the nearest station. Some of these villages are three or four miles from the railway, and the cane has to be brought from the station and the besoms taken back by cart. Sticks for the handle are easily procured in the locality. At one time cane cost 25*s*. a hundredweight, and the price for the besoms delivered at the station was 1*s*. 6*d*. a dozen.

One man stated that these same besoms were sold at 4*s*. 6*d*. to 5*s*. a dozen by the merchant to the dockyards.

If a better system of trading between the maker and purchaser were possible, there would be a chance of revival and commercial success. At the present time there is no trade organization of any kind.

Birch-made

All over the country a good supply of birch is to be found. Besoms made from birch-twigs have always been used by gardeners and road-sweepers and for many another purpose. They are generally made by the same men who make the heather-besoms, and the only market for these seems to be that of the locality. Birch-besoms are used at large steel-works, but there is not one example within this area of trade with these firms. Here again, some joint effort is necessary if the trade is to be developed in external markets.

Ropes

At one time there was a rope-maker in every market-town, who, alone or with one or two men to help him, spun and twisted ropes of all kinds used on the farms, besides weaving halter-bands and doing all the repairs needed in the neighbourhood.

An example of one of the old rope-walks still in use may be quoted. It runs for about ninety-five yards along the side of an old building, and it has been in use for the last 150 years. At one time eight to ten persons were employed here, but to-day there are only two, and these do gardening as well. No spinning is done here now. This work used to be done by hand, but the setting up of spinning-machines at large factories has made it impossible for the hand-worker to compete. The yarn is now bought ready-made, and only the twisting is done here, a boy turning the wheel while a man looks after the twist and the rope being the entire labour equipment needed. The rope-walk is uncovered, and the men are unable to do any twisting in wet weather. Plough-lines, leading reins, cart ropes, &c., are made.

Rope-making is a more or less seasonal occupation, the busiest time being the spring. Plough-lines are made in the autumn, and the summer is the least busy time. Halters used also to be made here. The men twisted the ropes while women were engaged to weave the halter-webs, which they often

worked in artistic designs. This has long since disappeared. A certain amount of netting is done. The nets are large and square-shaped, made of rather coarse rope for covering pigs in carts on their way to market. These nets are worked diagonally with a wooden needle and a wooden mesh to regulate the size of the loop. This work is done indoors in bad weather.

One man has a small shop where all kinds of ropes, nets, halters, &c., are retailed, and in all probability the retail shop is the only part of the business that will ultimately survive. One reason for the disappearance of the rural rope-walks is the concentration of the industry near the ports. The raw materials used in the spinning are jute, hemp, cotton, and flax. The quality of the rope depends largely on the material and its quality. Some flax, and even an inferior kind of hemp has been and can be grown in Britain, but almost all the material used to-day is imported from Russia, Italy, India, and Manilla. Some is already spun, and that which is imported in the raw state is spun near the ports. Large machinery has been installed at these centres, and the ropes made are sold to all parts of the country. In no rural district is the demand for ropes sufficient to justify the instalment of machinery, and the cost of machine-made ropes is so much less than those spun by hand that it is not surprising that these small rope-walks have been abandoned.

Tobacco Manufacture

Most tobacco is manufactured in urban centres, and this trade is not generally associated with rural industry. Nevertheless there are four tobacco factories in North Wales existing wholly to supply a local market. Three are at Amlwch (Anglesey) and they originated to supply the demands of the many men working at the copper-mine at Parys mountain near by. This mine ceased working a number of years ago, but the tobacco factories still exist. To cope with the change in the conditions they have developed a trade with retail shops, chiefly in the counties of Anglesey and Carnarvon, and also in other parts of North Wales. Each factory employs from five to nine persons. 'Shag' and 'twist' are made.

A similar factory originated at Carnarvon to supply the wants of the stone-quarrymen all over the county. This still produces mainly for its old market.

CHAPTER V

TANNERY AND ITS SUBSIDIARY INDUSTRIES

'Tanning and the manufacture of cloth seem to have been the only staple industries of commercial note in medieval Wales. The Welsh towns were favoured by the native supply of oak bark and skins, and tanning was generally confined to the suburbs of the towns and to the villages.' [1]

Up to the beginning of the nineteenth century every self-supporting village had its tanner, who used to convert all the cattle-hides and sheep-skins of his neighbourhood into leather, which he sold to the boot-maker, saddler, glover or any other local craftsman needing leather.

The tanner was an important member of the village community, and used to earn a good living at his trade. He needed considerably more capital than other craftsmen, because it took him eighteen months or two years to tan his hides. But his leather was worth having, and it is the superiority of his goods over the factory leathers that has prevented his complete disappearance.

There are records of numbers of small tanneries that have disappeared during the last fifty years, and now there are only about twenty-four in the whole of Wales. The treating of cattle-hides and of sheep-skins is no longer done at the same tan-yard; six of those remaining are tanneries producing heavy leather from hides, and all the others tan sheep-skins only.

There are at least four tanneries on the river Severn, and all the older ones are close to a plentiful supply of running water. The softness and absence of iron in some rivers make them specially suitable for tannage purposes. No tannery uses the water for power.

Heavy Leather

The six tanners of cattle-hides produce leather for strong straps, boot uppers, boot soles, harness, and other purposes; but the local supply of hides has dwindled, for with the decline of the rural population, an increasing proportion of the cattle is sent to the industrial neighbourhood to be

[1] E. A. Lewis, *Industry and Commerce in Mediaeval Times*, Cymrador.

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slaughtered. The boot-makers and saddlers, too, have deserted the country for the town. With the exodus both of cattle for slaughter, and of the craftsmen to buy his leather, the rural tanner finds it difficult to keep his business going. He has to face, further, competition from the big tanneries which have installed machinery and are able to turn out leather both at a lower cost and by quicker processes.

One tanner supplies the North Wales boot-makers and repairers, another supplies the Llanbrynmair district of Montgomeryshire, another the South Wales mining district. Even here tanners have to compete against large leather factories.

The bark of the local oak is the best kind known for tanning purposes. It is cut and stripped from the tree about April when the sap is rising. The stripping is done by the timber merchant, and he in his turn sells it to the tannery. Oak-bark was very expensive at one time, but the introduction of foreign gums and extracts for tanning decreased the demand for it. This resulted in such a fall in the price that often it is not thought worth while to strip the bark to-day. Most of these tanneries use oak-bark purchased from a local saw-mill.

Processes

The oak-bark is ground into small pieces by means of a crushing-machine at the tannery. It is put into a pit filled with clear water, and the bark is left there to soak for a few days. By that time the solution is very strong, and in this state it is pumped up into the different pits as required. The rural tanners also sometimes add a little of foreign extracts to the oak-bark tanning solution to hasten its action.

The hides are sorted and cleaned. They are immersed in a solution of lime for a while. Lime loosens the hair, which is then removed by spreading the hide on a board and scraping with a knife. The lime also fills up the pores of the skin and thus prevents shrinkage. But the reaction between tannic acid and lime is such that it is necessary to remove every particle of lime before the tanning process is begun, so the hide is washed again, thus leaving the pores empty and ready to suck in as much tannin as possible. The hide is passed from one solution to the other until it is properly tanned, the strongest solution being the last, and the next stages, though also done at these tanneries, are really the currier's trade.

After leaving the tannin-pit the hide is scoured, treated with sumach for colouring and pliability, and then left to

dry. The hide is shaved on the flesh side, glossed on the grain side to make it smooth, stained and greased on the grain side, and left to dry again.

A description of a tannery which is still worked by the old methods will show how these small units were organized. The tannery in question is in a typically agricultural district, and the tanner owns and occupies a few acres of land. In the tan-yard is a single shed where the hides are sorted, cleaned, shaved, and dried. Outside are about thirty pits, one filled with running water, two with lime, and the others with solutions of oak-bark tannin of increasing strength. The pits hold each a dozen hides, which is the average number brought into the tan-yard every week. They are steeped in one pit after another, reaching the strongest solution last.

The owner goes to market every week and the farmers and butchers bring him their hides. Sheep-skins are only treated with a preservative and sent away to be dressed or tanned elsewhere.

To-day very little business is done at this tannery for the tanner finds it difficult to dispose of his hides. In all probability this tannery will close down before long, as so many others have done. Machinery has been invented for doing all the work with very little manual labour, but the output in the rural tanneries is so small that skilled and unskilled labourers are still required for these processes.

Conditions and Prospects

The tanneries employ from six to twenty men each. Very few apprentices are found to-day, and there is no co-operation among the different tanneries. Their survival is due to the fact that oak-bark tanned leather is more durable and more pliable than leather tanned by foreign extracts, and thus there is still a limited demand for it for making hand-sewn boots.

The introduction of tanning by means of foreign extracts, giving a much quicker method, has killed most of the small old-fashioned tanneries, and those described above will either develop on industrial lines in the future or else close down, unless they can find some special market where the qualities of oak-bark tannage are found essential. The centralizing of the boot and harness trade, the quickening of the tanning process by machinery, and the excellent road and railway communications have been the cause of the decay of this

industry in the rural districts. On the other hand, if it be true that rural boot-making still has its function to fulfil in supplying the material for strong country boots, the remaining local tanneries may continue for some time.

Light Leather

The tanning of sheep-skins and goat-skins for making light leather is increasing, and many of the old tanneries now confine themselves to sheep-skins only. There are about eighteen of these in Wales, and all except two are in North Wales along the banks of the rivers Clwyd, Dee, Mawddach, and Severn. Each is in a good market centre, and has a plentiful supply of water. Most of these tanneries have developed far beyond the small village tannery, and the largest ones employ over a hundred persons. Others employ between twelve and twenty persons each.

Of late years the cotton-spinning trade in Lancashire has demanded so much 'roller-leather' that many of these tanneries do very little apart from supplying this market. The cotton-spinner needs a perfect covering for his steel rollers, which, by variations in size and in rates of revolution effect the attenuation of the thread before it is twisted. So he covers the roller first with roller-cloth and then with leather. This covering must possess the properties of elasticity, toughness, thinness, and extreme smoothness of surface. Tanned sheep-skins, and especially the skins of the mountain-bred sheep, have been found to be the best material for this purpose. Owing to the harshness of the weather their skin is very tough, thin and close-grained, and thus it has all the properties that are needed for roller-leather. There are thousands of steel rollers at each cotton-spinning factory, and new roller-leathers are needed periodically. Hence the demand is very great.

North Wales has excellent railway connexions with Lancashire, and the good local supply of sheep-skins and soft water are the other reasons for the location of these tanneries. South Wales has no tanneries producing roller-leather, although there are two or three producing light and fancy leather.

Sources of Raw Material

Originally the tanneries depended entirely on their own neighbourhood for their supply of sheep-skins. Many of

them still receive about 2,000 Welsh sheep-skins a week during the summer months—a large number of sheep being slaughtered to provide for the summer visitors all over this area. The smaller tanneries can only handle about 1,000 skins per week ; the surplus skins are therefore treated with a preservative and placed aside until the winter season. The largest tanneries depend very little on the local supply of sheep-skins, but import them in large numbers from industrial centres.

Processes

Whereas the hair on cattle hides is of little use, the wool of the sheep-skins is of great commercial value. Hence there must be some means of loosening the wool from the pelt without destroying either. The process is known as fellmongering. Much lime destroys the wool, so that the pelt cannot, like the cattle-hides, be immersed in the lime-pit in order to loosen it. Instead, after washing the pelt the flesh surface is smeared with a substance known in the trade as ' chemic ' and a little lime, and each pelt is folded lengthwise with the flesh side inwards. This mixture opens the pores, and in about twenty-four hours the wool is quite loose and can be pulled out easily.

The pulling and sorting of this wool is a skilled process and needs much practice. A man generally serves about five years' apprenticeship. The pelt is spread on a wooden board, flesh side downwards, and the wool is pulled by hand. As each pelt has from six to ten different qualities of wool, the man, while pulling, sorts the wool and throws each quality into a different heap. The following is one system of grading : (1) first white, (2) second white, (2) third white, (4) fourth white, (5) second grey, (6) third grey, (7) britch, (8) tailings. The whites and the greys are used in the manufacture of woollen goods and are sent off by rail to woollen centres, such as Bradford. ' Britch ' is the long and coarse wool growing on the lower part of the sheep's legs. It is used for carpets and is sent away for this purpose. The ' tailings ' are from the tail, and this wool is very short and is used for stuffing saddles, &c., often being called ' saddlers' wool '. Wool-sorting has become such a specialized and skilled occupation that many tanneries buy thousands of fleeces each year and sort these in the same manner, thus combining the wool-stapler's trade with the fellmonger's.

When the wool has been pulled the skin is treated in the same way as the hides, except that the finishing process differs. Most of these tanneries have installed machinery by which the leather is tanned and finished in about a week.

Markets

Lancashire is the chief market for roller-leather. The North Wales tanneries which supply it have a good deal of spare leather left, as only the central parts of the best pelts are used for roller-leather. The pieces vary in size, but the proportion of the width to the length is always the same and there still remain odd pieces along the side. These are used for making purses of all kinds, hats and caps, cushions, and all manner of fancy leather goods. Most of them are sent to English firms to be made up into purses, but at the Llangollen tannery there has lately been established a purse factory for making up the odd pieces, which gives employment to two dozen girls.[1]

A certain amount of leather for bookbinding, furniture-covering, and other fancy leather goods is made at each tannery. In fact, although the tanners only buy the pelts of sheep and lambs, they often produce imitation crocodile, morocco, and other 'foreign' leathers.

Labour

It was once the custom for a boy to spend a five years' apprenticeship at all the different branches of the trade. Except for wool-pulling and sorting there is very little need for skilled labour to-day. Machinery has been installed for keeping the pelt in movement while it is being tanned, for shaving off the superfluous flesh, polishing the grain surface, cutting the required shape out of the pelt, and even for measuring the leather. Thus very little skilled labour is necessary, and as a rule only unskilled machine-minders are employed. But a wool-sorter needs much practice, and he still serves a few years' apprenticeship. He is paid by piece-rate, the usual rate being about 8*d.* for every dozen pelts pulled, and a man can pull about eleven dozen pelts in a day, thus earning about 7*s.* 6*d.*

The demand for roller-leather is increasing, and with the good supply of sheep-skin and plenty of soft water for the different processes, the number of such tanneries is more

[1] See p. 90.

likely to increase than to decline. So far water has not been used for power, but in time the expense of fuel may be decreased in this way.

Tanning is said to be a very healthy occupation, and given healthy surroundings in which to live, tannery workers should contribute to a healthy rural population.

By-products

By-products are fat for candles and soap, glue, and ammonia. No portion of the pelt is wasted. The flesh scraped off the inside of the pelt after tanning is put under pressure to squeeze out all the fat. This fat is used to make candles and soap. Candle-making, therefore, is developed at some of the tanneries, and one of them still makes candles in an adjacent shed, although to-day both processes are carried on quite independently. Fat is dispatched to large candle factories. The residue after squeezing contains a good percentage of ammonia, and is sold to the farmers for manure.

The scrag ends of the skin, which are cut off before any tanning has taken place, are washed and sent away for the manufacture of glue.

Subsidiary Industries

Leather Purses

There is a tannery at Llangollen which has established purse-making as an industry for using up the small pieces of leather. It is a very old tannery which developed gradually for the supply of roller-leather for the Lancashire cotton-mills. The good leather around the margin of the roller-piece used to be sold to English firms, but recently it was decided to work up the waste product on the spot. A room was equipped with ordinary sewing-machines, in which an experienced cutter does all the shaping and girls sew the pieces together on the machines ; another worker attaches the fasteners, &c.

Normally about two dozen girls are employed, but during the investigation their number was less, owing to the great depression in trade. They produce purses of all kinds, as well as wallets, card-cases, hand-bags, and all kinds of fancy-leather goods. Every scrap of leather is used up ; the inferior, odd pieces serve for gussets or purse-linings. After a few months' training the girls are paid by piece-rates, and their wages compare favourably with those of the girls working at the woollen factories.

This factory is situated in a small country town where work for girls is scarce. Hence it is not difficult to get female labour, and it is a great advantage to the girls to find such work close at hand. Odd pieces of leather from other similar tanneries are used here as well. In the three counties of Carnarvon, Denbigh, and Montgomeryshire there are at least a dozen tanneries treating sheep-skins for roller-leather. Each of these has a large amount of leather left after the required shape has been cut, most of which is sent away at present. If, instead, this extra leather could be made up into small articles it would give much local employment to girls. With an abundant supply of water for power in the form of electricity, leather from the tanneries, and girls who would be glad of some such employment, there appears to be scope for considerable development of this industry.

Glove-making

Apart from the gloves made by members of the Women's Institutes the only type of glove manufactured is the 'hedging-glove'. This glove is made of hide that has been cured but not tanned. After this treatment the hide is still of a light colour, fairly thick, and the inner or flesh surface rather rough. In cutting out the glove, for which he uses a sharp knife, the cutter leaves the thumb separate, but the fingers are not separated. A leather thong about one-eighth of an inch wide is used to sew up the seams through holes bored with a punch along the edges.

This business was established in a small village many years ago. It now employs father and son only, and these are descendants of the original founder. The father and son cure the hide, and do all parts of the manufacture. Between them they are able to make about 300 pairs of gloves each year, which sell at a price of 8*s.* 6*d.* each pair. There is no definite system of selling. Much of the product is sent to different saddlery shops in all parts of Wales, and connexions are so old that advertisement and the like is unnecessary. The father also sells a great number to farmers at cattle fairs held at different centres during the winter months. They experience no difficulty in finding a sale. Being in the centre of a sheep-rearing area, the men do wool-pulling and sorting as a subsidiary employment, but the making of gloves is the chief occupation.

Candle-making

The making of candles was one of the domestic arts in Wales until the last century. Up to very recent times both ordinary tallow-candles and rush-lights were made at home. It was also the custom for women in the village to visit the farms for a day or so at a time, and out of fat and wick supplied to make a supply of candles. Gradually this old system disappeared, and candles were made in large quantities at certain centres. There are two firms, each located in a market town, that still make candles. One, a tannery firm, makes the candles actually on the premises. The other, though not belonging to a tannery, is within easy reach of one. At one time the fat squeezed out from the waste bits of the pelt at the tannery supplied the candle manufacturer with his material, but this supply of fat has long since been insufficient, and to-day all the tallow used is imported from South America. It is melted into a liquid, poured into cylindrical moulds in an upright position and with a wick in each. When the tallow is cold and hard the candles are extracted, weighed, and packed in bundles for transport.

One firm employing three men expressed the opinion that there was always plenty of demand (apart from the slump at that time), and that it was an industry that always paid well. On the other hand, the owner of another candle-works employing two men said it was a dying trade.

CHAPTER VI

POTTERY

THERE are a few potteries in Wales where flower-pot and earthenware crockery of a heavy kind are still made. At Ewenny, near Bridgend, potteries are believed to have existed in Roman times, and the other Welsh potteries had their origin very long ago.

Attempts have been made to produce pottery ware of a finer type in Wales. There are traces of a pottery at Llanelly where white china as well as earthenware used to be made. Fine clay was imported from Cornwall and Devon.

The fine porcelain of Nantgarw and Swansea is well known to collectors, having been introduced by a Derbyshire artist, but its manufacture has gone the way of similar enterprise in other places, and the factory reverted to the production of earthenware. There are now no potteries in Wales making fine white ware, and only the local clay is used.

Changes in household and farming customs have decreased the demand for crocks. The farmer's wife used, before foreign butter or margarine could be bought all the year round at the shops, to salt her surplus butter during the summer and to put it down in big earthenware pans to be mixed with and to eke out the winter supply of fresh butter. Now the housewife prefers margarine or fresh imported butter to the salt-butter made and preserved on the farm. Further, she can buy all sorts of light and durable enamel tins and aluminium ware, and thus has less use for the old-fashioned crockery vessels. This change of demand accounts for the decline in the number of rural potteries. In South Wales there are five only, three at Ewenny, near Bridgend, where there were seven in 1814,[1] one near Cardiff, and another near Newport. These are near the South Wales coal-field; at Buckley, in Flintshire, near the North Wales coal-field, there are eight small potteries employing from three to eight workers each. Suitable clay is to be found in other parts of Wales, but the potteries have disappeared.

In both the South and North Wales potteries the clay is close at hand. Buckley Common has a large deposit of clay

[1] T. H. Thomas, *Modern Pottery Manufacture.*

many feet deep, with about two feet of soil overlying it. This has given rise to brick-making and pottery, the bricks being made of the coarser clay that is found underneath the surface clay which was fine enough for pottery.

In Glamorgan and Monmouthshire the clay is a deposit of the estuaries, found in isolated patches.

In both pottery districts there is a local supply of coal. The existence of a local clay-bed was no doubt the original cause of the location of potteries, and the survival of these Welsh potteries is due to the presence of old families of potters, and to the proximity of coal for their kilns.

Modern industrial pottery has very little to do with the existence of local clay-beds, for many other ingredients have to be mixed with the clay in producing fine ware. Clay is a heavy but an easy material to transport by rail, whilst pottery is bulky and troublesome to pack and transport without damage. Also the amount of coal used for firing is very great. One of the Welsh kilns takes $3\frac{1}{2}$ tons of coal for a firing of $2\frac{1}{2}$ tons of crocks. Thus, apart from the survival of families who have owned kilns for generations, and have passed on the art of pottery from father to son, there is no particular economic reason for the development of potteries on rural clay-beds.

Markets

As with other industries having their origin in bygone days, the demand is mainly a local one. Hawkers still take cart-loads of bread-pans, cream-crocks, bowls, and other household vessels from farm to farm from the Flintshire potteries. Who among the hill farms of Wales has not heard of 'Buckley pans for storing butter'?[1] Lorry-loads of flower-pots and household crocks are taken to the market-towns of North Wales for sale. The South Wales potteries found a ready market among the hill farms and later in the industrial districts of South Wales. Truck loads of 'art pottery' are occasionally put on rail from the South Wales potteries for some distant town. These are mostly glazed vases and ornamental ware. Transport by rail involves so much loading and unloading, besides the heavy freight charges, that it is doubtful whether the heavy goods made at the Welsh potteries could compete in a more distant market.

There is, however, one product that is exported from

[1] O. M. Edwards, *Wales*.

a Buckley pottery for a special purpose. This is the 'lead pot'. Hundreds of these pots are used by firms which extract white-lead from pig-iron, to hold the iron and acids which act upon it. These pots are about six inches wide and four inches deep and are glazed inside. White-lead is one of the ingredients of the glaze used in pottery, so it is likely that this trade connexion, as in most cases where a rural product has found an external market, grew up through some personal intercourse with a manufacturer who supplied the pottery with its glaze.

Preparation of the Clay

At Buckley the clay of the lower strata is used in the brick-works, the chief product being glazed fire-bricks. The most plastic clay from the upper strata has for years been chosen out by the potteries and is consequently getting very scarce; this is sometimes given as a reason for the decline in pottery. The manufacture of fire-bricks out of the less plastic clay, of which there is plenty, combines brick-work with the potter's art of coloured glazing, and is a natural industrial development which has probably taken the most enterprising of the men. But with improved methods of preparation it is possible to make quite good earthenware vessels of the clay that still remains at Buckley.

The clay in South Wales is found in stratified beds along marshy river-banks, whither it has been brought by water. It seems to have qualities different from that of Buckley Common and to be ready for use with less preparation. It turns red or yellow when burnt, and the lack of variety in the clay has gone with a lack of variety in the product, which here, too, is of the rough earthenware type. As in North Wales, the introduction of other substances would be necessary for more varied production.

Throwing

Where the old methods have survived, the thrower takes a lump of well-kneaded clay in his hand and presses it roughly into the shape of a ball. The lump is placed on a rapidly revolving disk known as the potter's wheel, varying from one to three feet across, according to the size of the vessels to be made. Every pottery has at least one large and one small potter's wheel. A treadle-wheel is worked by the potter himself, or he may have a boy to turn it by hand,

or, if worked by motor, the potter has a clutch with which to regulate the pace with his foot.

The clay has to be plastic enough for the potter to shape the vessel with his hands on the revolving-wheel, and stiff enough to retain its shape while still moist and plastic. The walls of a big vessel must not be too thin or they will sag while drying. When shaped the vessel is detached from the wheel by passing a wire beneath it. A potter may have a wire rod as a gauge to show the height and width to which he must model his pot. The thrower is the skilled worker of the trade. The other processes are now supplementary to the machine and do not need much skill. Articles that are not hand-thrown are shaped on mechanically revolving disks by means of various automatic fittings. All that the skilled potter has to do in these cases is to give some finishing touch.

Jollying

One of the semi-automatic processes is done by a 'jolly' or a revolving mould, the upper surface of which is the shape of the outside of the vessel, on which the potter shapes the clay with his fingers. As he has not to build the clay up to the required thickness and shape, it may be made more liquid and the pace of the jolly need not be regulated so carefully.[1]

Pressing

Objects that are not circular, or those elaborate in shape, are modelled by pressing the clay into sectional moulds giving the outer surface of the article. In a few hours the mould is removed. Most of the ornamental work is done in this way.

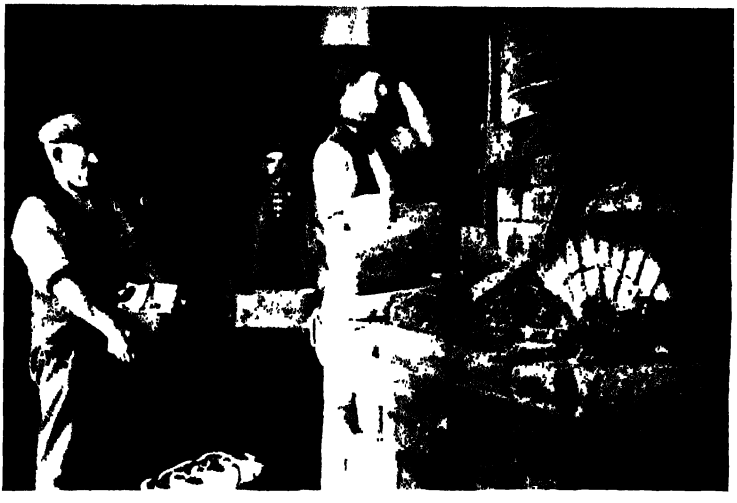
The shaped vessels are put in the open air or in a warm room to dry before firing in the kiln.

Firing

The pots are fitted into a brick-kiln, which when packed is gradually heated to the required temperature and allowed to cool again before the finished pots are removed. The old-fashioned kilns are conical in shape with four fire-holes underneath the chamber where the crockery is packed, and an outlet at the top for the smoke. Some potters at Buckley have adopted kilns of more economical construction. The

[1] Jollying is a process half-way between throwing and moulding and is much used for plate- and saucer-making in Staffordshire. The upper surface of plates and saucers can also be shaped, as the jolly revolves, with a moulding tool shaped to the upper line of the section of the plate.

TURNING VESSELS ON THE LATHE



FILLING THE KILN

top of the kilns is closed, and a flue inside up which the heat passes to the roof and down again, to escape at the bottom, resulting in a great economy of fuel.

Unskilled labour is used to pack the kiln. Kilns vary in size, but on an average it takes two men a day to fill one. The work has to be done with great care to avoid spoiling the shapes of the pots. The saggers are built up one within the other, supported on pieces of fire-brick, which system admits of a higher temperature than would be safe if the vessels were piled upon one another without them. By means of these pieces bowls can also be packed one inside another, the upper standing by its rim on to the rim of the one below it, thus effecting a great economy of space and therefore of firing.

Great care must be taken in regulating the furnaces of the kiln. Test-irons, which are rods with pieces of clay on one end, are put through holes in the walls of the kiln, so that they can be pulled out from time to time to indicate the condition of the clay. The kiln may take a day or two to reach the required temperature and a day or two to cool. Five days will cover the whole process of packing, firing, cooling, and unpacking. Some kilns are only fired once a fortnight.

Labour

The average number employed at these factories is five; at the largest there are eight and at the smallest two. The total number employed is about fifty. Every owner comes of a family of potters and most of them are skilled throwers, and it is usual for the owner to do some of the work himself.

With the exception of the throwers, who also do the finishing of machine-shaped pottery, all labour may be classed as unskilled. The rate of pay depends on the general rate for unskilled labour in the district. In the South Wales potteries a certain number of women are employed, but in Flintshire available female labour is absorbed by the silk-mills.

One skilled potter can manage a small pottery with the help of a labourer and some extra labour when required for digging the clay. In South Wales a master potter would employ two or three skilled workers to about five unskilled. In Buckley the proportion is about six unskilled to one or two skilled workers. This difference is due to the fact that more machinery is used, and as women are not employed at Buckley it may be inferred that machinery equipment makes possible

higher rate of wages for unskilled workers, though there is less demand here than in South Wales for skilled throwers.

There is the usual lack of young men to carry on the trade. The reason is said to be the poor wages, but since a thrower can earn from 45*s*. to 60*s*. a week on the present piece-rates and has been known to earn 80*s*. in a week, there must be other reasons. It is true that ten to twenty years ago a thrower's pay was very small, and this must have affected the number of apprentices who are the younger craftsmen of to-day. With the earliest introduction of machinery in the pottery trade, the demand for unskilled labour increased, while the demand for skilled labour decreased. But with the introduction of automatic fittings to the machines the demand for unskilled labour is decreasing. Hence, in spite of the fact that there does not seem to be much opening for skilled potters in the Welsh trade, a shortage of young highly skilled throwers is felt.

Several reasons for the shortage are indicated by conditions in Wales. The term of apprenticeship is seven years, a very long one for a boy entering at fourteen or fifteen, who will not have the status of a craftsman until he is twenty-one. Moreover, the training that he is likely to get is very poor and unattractive. He learns from a man who has spent his life in making a very few shapes, all of which he learnt in his day in the same place, possibly in the same pottery, using always the same kind of clay and making for the same market. No wonder that, after the novelty of shaping the clay on the wheel has worn off, the young thrower's only interest in the trade is to increase his earnings by throwing his shapes as quickly as ever he can. Since a change of shape means slower work for a while and less earnings, he prefers to keep to the very few. Seeing the shrinkage in the demand for their goods, for reasons already given,[1] and the increasing use of machinery, the older throwers have declined even to teach all the shapes they could make themselves. This policy appears to have had the desired result of giving the thrower's skill a scarcity value, but if pottery is to be looked upon as an art still dependent on the thrower's skill and imagination, it has been narrow and lacking in foresight, and throws light on one of the great evils of piece-rate earnings—by which workers are paid according to the quantity they turn out—in the craft trades.

[1] See p. 93.

Organization

There is no organization either of master potters or of employees. The very small potteries do not come under the jurisdiction of the Industrial Council of the pottery trades, though its existence may have helped the throwers to increase or at least to maintain their piece-rates.

Position and Prospects

There seems no reason why pottery should not be developed in Wales, as it has been developed elsewhere, especially in the districts where coal and clay-beds are both to be found. In North Wales industrial development has gone farther, and with the kindred industry of glazed fire-bricks close by and the demand for 'lead-pots' which can be made by machinery, it seems likely that development will be on industrial lines, and that an increasing use of machinery will be necessary in the potteries that are to survive.

In South Wales, which is not so near the great industrial centres of Lancashire and the Midlands, the only side-line in which there seems likelihood of development is that of 'art-pottery' of the lighter kind. It is not uncommon to combine the production of a certain type of fancy goods with that of heavier earthenware, for the materials used and the temperature needed for firing are much the same. The prospects of this type of pottery have been considered in the report on Potteries in the south-western counties, to which reference may be made.[1]

Unfortunately much of the so-called 'art' pottery that is made for fancy-good stores is apt to be very poor both in design and quality, and considering the lack of opportunities of training at present afforded, it seems clear that help from outside will be needed to raise the standard of the industry. An improvement in the standard of this craft might be inculcated through Art Schools or technical classes, if these could be brought within the reach of young employees and apprentices. Instruction in the chemical properties of clay, glazes, and other substances, and in their behaviour when heated to various temperatures, with study of pottery and its history, and practical work in throwing and in design, would greatly enhance the interest of a young potter of ability.

[1] *Rural Industries of England and Wales*, vol. iii, p. 151.

CHAPTER VII

VILLAGE REPAIRING AND MANUFACTURING WORKSHOPS

(1) *General Considerations*

In former days the village craftsmen were far more numerous and important to the farmers than they are to-day. The wheelwrights and blacksmiths of a former generation used to supply the farmers with everything that they needed, from a nail to the household furniture, and there were saddlers, boot-makers, tanners, weavers, coopers, and other craftsmen who were members of the village community and served the farmer's needs.

The number of these craftsmen has dwindled until to-day almost the entire rural population consists of farmers, farm workers and village merchant-tradesmen. The wheelwrights or blacksmiths are the only craftsmen in most villages and even these are by no means to be found everywhere. The census figures show a decline of over 50 per cent. in the number of village wheelwrights [1] between the years 1851 and 1911, and the number of village smiths also shows a marked decline.[2] Yet the wheelwrights and blacksmiths still form the largest section of country people engaged in rural industries. What are the reasons for the decline, and what is its economic and social significance to the rural population, which in Wales is so largely a population of farmers ?

A number of causes have contributed to the decline. First, with the use of more complicated agricultural implements for gathering the harvest and for other purposes on the farm, and the introduction of all kinds of motor-power for traction and transport, there is less work for the wheelwright and saddler, whilst the smith must learn a new trade as a machinist. There are fewer carts and traps and carriages to be made and repaired, and fewer horses to be shod, saddled and harnessed. So far few of the local craftsmen have learnt to repair the tractors and the agricultural implements of new design, and not many of them have had the foresight or possibly the opportunity to take up agencies for the sale of these imple-

[1] See p. 104. [2] See p. 108.

ments and for the procuring of ' parts ' needed to repair them. Thus they have let slip a valuable opportunity for lucrative business, and the farmer must take his implements into the town for repair or the agent must send out a mechanic to the farm. Tractors, however, have not had much influence in Wales, though on some of the lowland farms the ground is level enough for their use and they are found more economical than horses.

Formerly the water-wheels that are still used on some farms to drive the chaffing and pulping, grinding and other stationary machines, gave work to the village carpenters and blacksmiths who helped to make them, fix them in position and keep them in repair. The other old-fashioned sources of power, the wind-mills used in Anglesey and elsewhere where the fall of the streams is too gradual for water-power, and the horse-gear, which was merely a pole fixed to a cog-wheel and pulled round by a horse, also gave work to the village craftsmen. Nowadays these old-fashioned contrivances have largely given way to oil-engines, which are set up and kept in repair by a mechanic from the neighbouring town. The handy craftsman has, in fact, given place to the engineer and the mechanic.

Again, there is less tillage than there used to be when the villages were more self-supporting. In the western valleys the great rainfall and stormy winds make the raising of corn a very precarious undertaking, and in other regions where the soil is not very fertile, there is a tendency to revert to sheep-farming, which is found more profitable than tillage. This means that fewer gates and fewer implements are needed. Every farmer has a few hurdles, but these do not give very much work to the carpenters. Putting all these facts together, many people consider that there is very little need for the village craftsmen except for repairs. But although there is no longer room for so many as there used to be; yet examples are to be found of capable men who, by moving with the times, have found it possible not only to maintain their business, but to expand it.[1]

Unfortunately the dwindling of the demand has had a very serious effect on the proficiency of many of the village workshops, and this has reacted on the farmer, who needs a reliable workman for repairs within convenient reach. But the farmers do not always remember that they are the only

[1] See pp. 106 and 111.

customers for these craftsmen, and that it is only through their interest and support that a smith's or wheelwright's business can thrive. A man who is never asked to do anything other than repairs, loses the skill and energy to make things. But because a smith or wheelwright is incapable of making the complex implements now in use, this is no proof that he might not have learnt enough to keep them in repair if he had the opportunity and encouragement to learn new ways. It is to be feared that, far from giving encouragement, many farmers have taken advantage of the depression and isolation of the remnant of craftsmen, to beat down their prices to discouraging levels.

As regards the younger men, these are not coming into the trade. Boys are not interested nowadays in workshops where there is no machinery, nor are their prospects bright enough for parents to encourage boys to serve a long apprenticeship, if they can earn money in some other occupation. In Wales, the existence of quarries and mines give opportunities of alternative employment even to youths who have been brought up in the remoter villages.

Moreover, a good craftsman is not necessarily a good teacher, and with the gradual dwindling of the demand, craftsmanship can hardly fail to deteriorate, and with it, the ability to give a good training. There is always the danger that so-called apprenticeship may be nothing better than a cheap and convenient way of getting an errand boy and jobbing assistant. Apprenticeship is a system that is likely to improve in a growing, thriving industry, and to degenerate in a depressed one. There is also, among the older craftsmen who have learnt to do everything by hand, a prejudice against machinery and new methods that is as unreasoned as it is natural to the uneducated mind which finds its methods out of date and its hard-won skill no longer valued.

Even if the craftsmen are good teachers of manual skill they are for the most part quite incapable of practising or of teaching any system of costing and book-keeping. They can tell how much they charge for an article, but how they arrived at the sum it is quite beyond their power to say. As a rule they charge a traditional price with a little added on for increased costs. They have no idea how to arrive at the price of a new article by adding cost of material, value of time spent, or cost of labour, overhead expenses and so on. They do not even follow prices charged in other districts. So the

boy does not gain any knowledge of how to organize a business, even if he acquires manual proficiency. It is clear that some help must come from outside the trade if matters are to be improved. But it must be remembered that it is the all-round man and not the specialist who is needed in these crafts, and perhaps there is no form of technical class that would quite take the place of a term of practical experience in a flourishing workshop.

The effects of the disappearance of village workshops are likely to be serious. The existence of a smithy or a wood-working shop gives to village boys an insight into practical work, and to some of them an opportunity of handling tools in early youth, such as no school 'hand-work' can give. This may exert a powerful influence on their choice, later on, of a skilled, rather than an unskilled occupation. A thriving village workshop might indeed be the direct avenue to useful up-to-date craftsmanship of an all-round character, especially if some machinery were installed. And some of the boys destined to be farm-workers might gain enough insight into the mechanism of the farm implements that were repaired in these shops, to become handy-men themselves and to learn to keep things running on farms remote from the smith or wheelwright.

The work of a village craftsman is often spoken of as 'skilled' as opposed to the 'unskilled' work of the labourer. Yet a farm-labourer can gain such insight and skill in his work that it will far surpass that which can be taught to his class as a whole, and his work may be of a far higher standard than that of the skilled craftsman in its method, its planning beforehand, its originality and in its results. The opportunity of practising some handicraft for which he had a taste, and which would be useful on the farm, might change the whole outlook of a farm boy who happened to have little aptitude either with animals or for tillage, by opening out some new avenue in life. As things are now the village boy has no choice but to become a farm-worker or an unskilled labourer or to leave the district. Some leave very young for districts where there is more choice of employment. Others work for a few years on the farms until they have earned enough to take themselves to the towns. It is the brighter, more enterprising lads who go, leaving behind those who are temperamentally more inclined to stagnation. The craftsman was an important and respected personality in the village. His independent position and his dealings with the farmers showed him a

different side of the farmer's character than that which the less educated labourers see. He was proud of the apprenticeship he had served, of the long tradition behind him, and of whatever skill he possessed. He brought to local affairs an outlook somewhat different from that of the farmer, and all this was to the good in rural society.

Before considering by what means conditions might be improved, the various trades must be considered separately, and the facts revealed by investigation may suggest some practicable remedies. But the whole problem needs an even more detailed study than was possible during this survey, and the suggestions made here should be taken rather as lines on which further study and possible experiments might be undertaken, than as the final results of a complete investigation.

Wheelwrights and Carpenters

The wheelwright is usually a general carpenter who has a small workshop in the village. Either the owner is the only craftsman, or he may employ one, two, or even three workers. He usually buys his timber locally, and he trades exclusively with local people, mostly farmers. His trade to-day is chiefly repairing, and for this he sometimes visits the farms.

Besides the wheelwright's particular work of making and repairing carts and wagons, the articles made in some of the wheelwrights' and carpenters' shops include ladders, wheelbarrows, dog-kennels, fowl-houses, feeding-troughs, gates, hurdles, doors, articles of furniture and coffins.

The variety of classifications of occupations used in the earlier census reports makes it difficult to use them as illustrations of the decrease in the numbers of carpenters and wheelwrights. However, there cannot be any doubt that there has been a considerable decrease, and this has been more pronounced in the villages than in the towns. The following figures from the 1911 and 1921 census reports apply to the rural districts only and help to show how the decrease still continues:

		Anglesey.	*Carnarvon.*	*Radnor.*	*Brecon.*
Wheelwrights . .	1911	146	314	87	207
Carpenters . .	1921	124	263	57	185

There is many a village to-day without a wheelwright where formerly one was supported. If a large area is without a wheel-

wright a farmer needing some urgent repair may have to spare a horse and cart for many hours entailing great inconvenience and possibly risk to his crop, when the weather is uncertain.

But it is not desirable to have a wheelwright's shop in every village; for repairing, unless combined with some form of manufacture, is a very precarious employment. Where a wheelwright and carpenter has succeeded in running a manufacturing business, he has had to expand his market. It follows therefore that the existence of a flourishing workshop in one village would prevent the successful development of another such business within a certain radius. Thus occurs here and there a flourishing all-round workshop, generally where there are some favourable circumstances, such as good communications, a fairly cheap supply of suitable timber near at hand, or perhaps a source of power such as a swift stream, but it is only if there is a man of enterprise, organizing ability and foresight, who can seize the opportunities offered him.

The wheelwright's work requires the existence of a smithy close at hand for supplying and fixing the accompanying ironwork, such as ferrules, tires, &c. Owing to the decline in the number of smithies as well as of wheelwrights' shops, it often happens that there is not a blacksmith in the same village as the wheelwright. So the wheelwright must either bear the cost of having the smith's work done several miles away or he must set up a welding plant. For this he seldom has the capital, and if he has, the demand may not be great enough to encourage him to take the risk.

In some fairly central villages where the smithy and the wheelwright's shop are close to one another and material is available, it is still possible to find the manufacture of carts. A cart or wagon made by the village wheelwright lasts much longer than the factory product, but the latter is delivered more cheaply than he can make it. There is not much opening for any but heavy carts and wagons, for the lighter traps can be bought in the towns and are preferred to any that are made locally.

Certain villages are to be found at the junction of two or more valleys, where farmers are not the only element in the population, which form a shopping centre for the little hamlets scattered along the sides of the valleys. In these central villages may be found a wheelwright's shop on a fairly large scale with a smithy and forge, and here, in addition to

repairs and odd jobs for the farmers, a considerable number of new carts are made.

Other branches of carpentry are sometimes added to the repairing wheelwright's business by enterprising men. One man with a good supply of ash, beech, elm, and oak, has introduced a small power plant in the form of an oil-engine. This was put to drive a band-saw, circular-saw, planing-table, lathe, and a few other smaller machines. He now employs six men, and makes wheelbarrows, rakes, tool-handles, pitch-forks, wash-boards, and other things. A blacksmith does all the metal work at a forge near by. Very little repairing and all round work is done here. The market had naturally to be created, but with good communications this has been accomplished. Another found the local timber very suitable for making hay-rakes, i.e. those used by hand. He installed a small oil-engine and the necessary plant, and now makes a few hundred hay-rakes annually in addition to doing local repairs and all-round carpentry. A mixed trade of this kind is far safer for a rural district than specializing entirely on making any one article, for with a specialized trade one bad season, or a miscalculation of the market or the costs, may upset the whole business, with disastrous results to its owner.

A certain number of sheep-cribs are wanted by farmers, and these are made by some of the local carpenters. It might be possible, where they cannot make the small parts so cheaply as they could buy them, for the local carpenters to make the framework, fitting in the ready-made smaller parts and thus saving the expense of transport of the bulky finished article.

Apprenticeship

As with other village crafts, the term of apprenticeship to wheelwrighting used generally to be five years. A boy entered the workshop immediately on leaving school, and as a rule when he had 'served his time' he stayed on as a craftsman in the same business. Nowadays there are very few apprentices outside the owner's family, but one boy is usually trained so as to carry on the business when the owner dies. There are many reasons for the shortage of apprentices. A boy and his parents need more inducement to make him serve several years' apprenticeship than the small workshop with its dwindling market and apparent lack of all prospect of development can offer. Moreover, a boy of ambition and

originality finds the work at a repairing shop very tedious and dull. He objects to having to work hard sawing and planing by hand when he knows that this could be done by machinery. He would rather enter some big shop where he believes he will find more scope. He does not realize the many possibilities of the all round rural wood-working shop where suitable economic conditions are to be found, nor that it needs for its success those very qualities of inventiveness and mechanical interest that he desires to exercise. The question how to stimulate and feed these interests in the young people without their having to leave the country districts is one which needs searching investigation and bold experiment.

Materials

Unless there is enough local timber for the existence of a local saw-mill the village wheelwright buys directly from the owner of the plantation or the trees. The annual amount used by one craftsman and one helper is not very great. The scarcity of timber caused by excessive felling during the Great War [1] should prove only a temporary drawback to woodwork.

Where there is a good supply of timber it is not unusual for a timber merchant to set up a saw-mill. In such a neighbourhood the carpenter can buy wood ready sawn to size and is able to dispense with his own circular saw, or with the laborious process of hand-sawing.

Organization

There is no organization among the village wheelwrights and carpenters.[2] Contact with their fellow-craftsmen, so that fair prices might be fixed, rules of apprenticeship made and revised, arrangements made for displaying goods at the agricultural shows or for other ways of advertising, and some form of credit established for enabling a wheelwright to get material or plant on easy terms and to give the very long credit that farmers can get elsewhere on big articles; all these objects might be gained through organization. But in a trade in which business on a family basis is normal, it ought

[1] See p. 4.

[2] *Rural Industries in England*, vol. i, p. 181. There is an organization of Master Wheelwrights in the towns in England, but few rural craftsmen have joined.

to be an organization of craftsmen rather than of owners or employers, otherwise it will remain old-fashioned in outlook, since the younger men are not in position to become members.

Blacksmiths

In former times the village blacksmith used to make and repair all the iron implements used on the farm. With his forge and his anvil and a very few tools he was able to work his iron to any shape he wished. He made ploughs, harrows, scythes, sickles, hinges, and other things, calling upon his neighbour the wheelwright for tool-handles and other wooden parts, and co-operating with him in making carts, wagons, and traps. He also did much shoeing before the era of the motor-car.

Except in shoeing and in some repairs the smith has as much need of the wheelwright as the wheelwright has of him, and the fact that there are forges in villages without a carpenter is a symptom of the decline of manufacture in the smithies. Many of them, in fact, do nothing to-day but shoeing and repairing.

Census figures show a considerable decline in the number of smiths :

		Anglesey.	*Carnarvon.*	*Radnor.*	*Brecon.*
Blacksmiths . .	1851	250	520	194	335
	1911	216	545	107	269
	1921	178	435	67	239

The reason for the greater decline in Radnor than in Anglesey and for the increase between 1851 and 1911 in Carnarvon needs further investigation. If the figures were given for the rural areas alone the decline would be more pronounced.[1] It must be remembered that the introduction of motor tractors, lorries and cars did not begin to be felt until fifteen years ago, or later, so that the decrease in the demand for shoeing has been most rapid in quite recent years.

For shoeing and for emergency repairs it is important for the farmer to have a smithy close at hand. Otherwise he

[1] The figures for aggregate of rural districts are available for 1911 and 1921 and are as follows:

		Anglesey.	*Carnarvon.*	*Radnor.*	*Brecon.*
Blacksmiths .	1911	146	314	87	207
	1921	124	263	57	185

must deal at the town to which he goes regularly to market, and this is where, as a rule, the more flourishing blacksmiths are found. It is not uncommon in a town for some smiths to concentrate on shoeing and for others to do repairs and a certain amount of manufacture. In a village this would be impossible for lack of sufficient business, and it is a great inconvenience to the farmer if, as sometimes happens, the smith does not like shoeing. This work involves, besides mechanical skill, skill in the management of horses, but these qualities do not necessarily go together and blacksmiths have not necessarily a taste for shoeing. As for repairs, there is a growing tendency for the farmer to buy small fittings from the ironmongers and to attach them himself, and his more elaborate implements are often repaired by a mechanic from the town.

Very few of the village blacksmiths have installed machinery. Welding plants are few and far between, and the smiths as a class have an aversion to machinery, due probably to the dwindling of the market and the consequent fear of there not being enough work to go round.

Apprenticeship and Instruction in Farriery.

The term of apprenticeship is the usual five years, but, as in the wheelwrights' shops, there are hardly any apprentices to be found. As might be expected it is in the larger shops, with a variety of trade, that the young people are found, and these are often at the market-town.

An investigation of the state of the blacksmith's trade in Oxfordshire may be quoted as the conditions described appear to be much the same as those prevalent in Wales. The needs of the industry as detailed may be summed up as follows :

(1) Provision for instruction in farriery.

(2) A solution for the apprentice difficulty.

(3) Education in the possibilities of simple machinery.

(4) Introduction of new forms of work of a more remunerative nature than shoeing.

Several counties now have an instructor in farriery who goes from smithy to smithy to lecture on horse-shoeing. For the sake of the horses and their owners it is very important that smiths should understand enough of the anatomy of the horse's foot to realize that a careless boy may inflict lifelong injury and suffering. The better educated smiths would like legislation forbidding any blacksmith to under-

take the shoeing of a horse unless he held the qualification of R.S.S. (Registered Shoeing Smith) from the Worshipful Company of Master Farriers.

In Oxfordshire and in some other counties the farriery instructor has a travelling van with which he can demonstrate various processes of the smith's work. This gives him the opportunity of bringing appropriate machinery and various appliances to the notice of the smiths, and of making suggestions as to articles that he can make, and firms from whom he can get machinery.[1]

Whether technical classes in the towns are of much use to village boys is a doubtful question. As a substitute for a term of apprenticeship most, if not all craftsmen, would have none of them. But they speak with a natural prejudice against any system that differs from the way in which they themselves were brought up, and some practical experience in light iron-work while a boy is still young might open his mind to possibilities of the metal crafts in a way that years spent at a shoeing forge would fail to do. It is clear that so long as horses are used some men must know how to shoe them; in the hilly districts it is unlikely that the substitution of motors for horses will go beyond a certain point. There is a noticeable unwillingness on the part of boys to learn this trade. The serious question then that faces the farmer is how to make it more attractive. Mr. Elkington's suggestions, and the experience in counties where instruction in farriery is given, need very careful consideration.

Organization

There is a Master Farriers' Association for England and Wales,[2] with local branches, but very few of the smiths in Wales belong to it. It conducts an interesting trade journal with instructive articles on various subjects connected with farriery.

Examples of Development

As amongst the wheelwrights there are blacksmiths here and there who have developed some thriving trade from the ordinary business with which they started. In one rural workshop the blacksmith makes a patented plough, also harrows and hay-lifters; in another the same things are

[1] *Rural Industries Intelligence Bureau.*

[2] See *Rural Industries of England*, vol. i, p. 184.

made, and the hay-lifter is patented. In both shops machinery has been installed, a number of men are employed, and the implements are sold over a large area of Wales. Both advertised their wares at the outset, and still do so a little, but they are now well known and generally have plenty of trade. Both suffer the disadvantage of being remote from the railway station whence all their material is brought, but motor lorries have come to their aid. One of these firms is contemplating the opening of a shop and warehouse in the nearest town, but so far both deal either through the ironmongers or directly with their customers.

Another village blacksmith has developed his business into that of a shovel-maker. Here shoeing and repairing are still done. Two men only are employed, and the working of the whole business shows signs of great skill and ingenuity on the part of both workers. The only source of power is a water-wheel utilizing the water running from the stream alongside the buildings. This wheel, like the wheel in the 'pandy' or fulling-mill,[1] not only operates a big, heavy hammer, by the simple means of four pegs fixed on to an inner wooden wheel, but it also works the bellows that blow the fire. Even the shape of the furnace is unique and original, and all the machinery and tools have been made at the workshop. Bessemer steel is used. This is cut into pieces about six inches by three inches and out of each of these is hammered a shovel. One man heats each piece and, when it is red hot, passes it to the other man at the hammer; when the steel is cold it is re-heated, and so with about four heatings and hammerings the shovel is produced. These shovels—very durable and useful for farm-yard work—are in great demand, and within the county of the manufacturer himself there are constant complaints of their scarcity. In fact, many farmers refuse to take any other shovel, whatever price is demanded for this type.

These few examples serve to illustrate that the age of the rural smith is not entirely past, and to show what can sometimes be accomplished with a little money, ingenuity, and organization.

In addition to these rural smithies there are fair-sized iron-foundries in some of the towns, and in one small village there is even a large agricultural implement factory employing a few hundred men.

See p. 24.

Saddlers

The saddler's shop has become purely a repairing shop where hardly any new harness is made nowadays. Those in the village very seldom have an apprentice, and most of them are likely to close down with the present generation, unless some means of reviving them is found. They have no machinery and no organization, and are usually trying to undercut one another in the belief that this is the only means by which to maintain their business.

The saddler's repairing work is seasonal. During the winter he has very little, often not enough to keep himself occupied. During the spring and especially the summer he may have more work than he can cope with, and in many cases the farmer wishes to have things repaired and returned at once. Some parts of the harness are left on one side during the winter, and in the summer the farmer realizes that they need repair just as he is going to use them. With a little foresight farmers could remedy this state of affairs, to the advantage of the trade. When the village tradesmen used more horses this seasonal disorganization was not so severely felt as they were in need of repairs at all times of the year.

In the towns the saddler has added a small retail business to the workshop. At this retail shop he stocks factory-made goods, harness, all kinds of leather articles, whips, ropes, and halters. This gives him a separate means of existence, and he tends to concentrate more and more on it, doing what repairs are necessary.

Cobblers

Boot-making has totally disappeared from most villages. Before the centralization of the leather industries in urban areas the village boot-maker was a skilled craftsman. In fact, it was usual to find two or three skilled boot-makers in a village, who supplied the men, women, and children of the neighbourhood with all the boots and shoes that they required. The boot-maker bought his leather at the small rural tannery. He often employed so many as six men at the workshop. The boots worn then were of a heavy and durable type and made to measure; they were cut out, shaped, and sewn together by hand, so that very few tools were necessary. A man spent about five years as an apprentice to this trade.

In addition, there were some centres where the number of boot-makers exceeded those necessary to supply the neighbourhood. For example, at Llanerchymedd, a village in Anglesey, there were so many as 200 boot-makers less than a hundred years ago. At Llanbrynmair, Montgomeryshire, there was a similar centre. These craftsmen bought their leather locally, and their machinery included little besides a boot-sewing machine. They supplied large areas, their fame having spread far beyond the county. At Llanerchymedd to-day there is not a single boot-maker, and at Llanbrynmair there are less than half a dozen men who can make a complete boot.

With the introduction of machinery the industry migrated to large centres, where thousands of boots could be turned out very quickly. They are distributed by rail to all parts, and as they are sold more cheaply than those made at centres such as the two Welsh ones mentioned above, competition was impossible and their trade declined. These factory-made boots did not reach, at first, the secluded villages, and here the boot-maker stood his ground for quite a long time. But when the tanning industry migrated also to urban centres the boot-makers found great difficulty in procuring the right sort of leather, and their numbers, too, have gradually decreased.

There are still a few boot-makers to be found amongst the boot repairers of isolated villages, but a boot-maker has great difficulty in obtaining the type of leather suitable for his hand-sewn boots. He makes mostly heavy boots for country wear for the farmer and his sons, and the number of tanneries in Wales still treating heavy leather are very few, and the cost of transporting this leather to the isolated village is rather high. Very few young men are found who can make these boots. The majority are elderly men, and it is likely that with their death the industry will disappear from the remote villages. A few heavy boots are also made at some of the country towns, but these makers experience the same difficulties as the village boot-makers, and except in heavy boots, competition is too keen for them. Nowadays there is one cobbler for repairs in each village, and of these most of the young men never learnt the craft of making a new boot. They spend a year or so learning to mend boots and shoes, mostly rough work, and they depend entirely on their boot-mending.

There is still the idea that the making of heavy boots will remain in the rural areas, and will increase in the future, though definite reasons for it are rather hard to seek. It is a fact that some men, who at one time worked at large boot factories and earned very good wages, prefer to settle down in a small village where their weekly earnings are much less, but where they can live in healthy surroundings on smaller means. A man living in a country village, if he has a good and reliable supply of leather which he could buy in small quantities and at a reasonable price, would still have scope for making heavy country boots. He would have to combine this with boot-mending. He must deal only in the best leather. In spite of initial expense there are many who would willingly pay the extra money for a really good pair of boots, so long as they are neat. The factory-made boot has a bad reputation, and some people ask for something better.

General Conclusions

It would be desirable, before making any attempt to improve the conditions in the village repairing and manufacturing workshops of the Principality, to form some estimate of the number of young persons that they will be likely to absorb, by finding out how wide an area a single business can cover, and how far the farmers can go for their repairs without undue inconvenience. The area will differ according to population and means of communications, and a variety of districts would have to be studied.

Another matter for further study is the most economical size for workshops of various types ; for example whether two men and a boy could make as profitable use of a plant as a larger number of workers, and, if not, what kind of equipment is the most suitable for the smaller business.

Allied to this question is that of by-industries ; whether it is possible to provide regular employment in this way for men or boys who are only needed in the busiest seasons for the main repairing business of the shop, and what by-industries would best fit in with the main industry.

Problems of marketing have to be studied with special reference to the small scattered industries of craftsmen who can only make for stock when their repairing work is slack. The question of advertising is an important one ; much help might be given by bringing to the notice of

builders and architects fittings that could be made in village workshops.[1]

There are also questions concerned with manual skill and training. The various branches of leather-work, i.e. saddlery and boot-making, are not, in practice, carried on in the same shop. This may be merely from historical causes. It is possible that a craftsman in leather might make a good living if he could turn from one branch of leather-work to another according to demand. Similarly with woodwork; turnery and cabinet-making might be combined with heavier woodwork, and light metal-work might be done at the village forge. If prejudice stands in the way of such a combination of crafts it might be overcome by the further development of technical classes. In fact, carefully considered technical education for adults may provide a satisfactory solution of many of the disabilities of rural industries. There are probably a number of thinly populated districts where a smith would find it difficult to earn a living, but where the farmers still depend upon horses and must get them shod. It might be possible, by some definite hope of earning a skilled worker's wage, to encourage farm-labourers through technical classes to learn to shoe and to get their R.S.S. qualification. Skill as a handy-man in woodwork, or in mechanical repairing work, would also be worth encouraging among agricultural labourers showing a bent in either direction, and technical classes for young farm-labourers would be more easily arranged than for smiths' or wheelwrights' apprentices alone. It is worth while to enlarge the experience of village boys by interesting them in various manual crafts, if there is any possibility of their following up one or other interest in later life. A few hours spent now and again in early boyhood at the village forge or in the wheelwright's shop in actually making something in wood or iron, might be of little enough value as a technical training, but it might nevertheless give an opportunity that would never recur of awakening interest and a sense of desire and even capacity for a craft.

It seems from the conditions so far brought to light that some outside help will have to be given if the depressed conditions of these village trades are to be remedied so that

[1] The Rural Industries Bureau issues a Directory of Retailers interested in country crafts. It is intended both to inform the public where to obtain the products of British handiwork, and the craftsmen of possible markets.

young workers may be attracted into the industries. But the craftsmen should be helped to help themselves. Organization is notoriously difficult among scattered workers, and yet without common action and mutual support these craftsmen can hardly continue, much less can they expect, while conditions are depressed, to attract young workers to their trades, or to teach them proficiently when they get them. School-work and technical classes may be a useful preparation or supplement, but they can never take the place of experience in a thriving, small 'all-round' business, under an enterprising and experienced master.

It is not easy to suggest the best form for the organization of village craftsmen to take. In a small family business the division into an Employers' Association and a Workers' Union is not suitable, and it would seem worth while to try some form of association open to any proficient craftsman whether an employer or a wage-earner. Only by bold experiment and the spirit of adventure can a final decision be taken as to the possibility of an economic future for many of the rural workshops in the face of mass production in urban industry.

CHAPTER VIII

HANDICRAFTS AND CRAFT EDUCATION

Toys

In the small village of Trefnant there is a toy industry known as the Vale of Clwyd Toy Industry. It originated in an attempt to assist a native of this village suffering from partial disability. In 1909 he was helped to set up a small workshop, and gradually the experiment became so successful that an artist was employed to design, other men in the neighbourhood shaped the wood, and girls painted the toys. Strong, durable, and artistic toys were made, including the Welsh Red Dragon, packs of foxhounds, horses, ducks, geese, and other farm animals, carts, dolls' houses, and so on. The industry thrived exceptionally well, employing many local people, and having very good trading connexions with large firms in London.

During the war it was taken over for the training of disabled men for basket- and chair-making, &c. Later, in 1920, the Government decided to open a training centre for such men at Carnarvon, and so the trainer left the valley.

Once more the establishment came under the care of local people, but all the trading connexions had been broken and the industry has not so far succeeded in regaining its former size. About four men are employed, and they make toys of a special type, as well as willow-baskets and chairs; they also make furniture. Foreign toys are imported so cheaply that competition is too strong for ordinary toys to pay, and the success of this industry seems to lie in developing on special lines, and producing articles not made elsewhere, such as the 'Welsh Dragon' which is so popular in Wales.

Leather Purses and Bags

As often happens, the interesting and profitable industry of hand-made leather purses, wallet cases, and leather bags of all kinds has grown from small beginnings. In this case a single worker started about twelve years ago to make bags for her friends. The business grew and several girls are now employed all the year round. All the goods are sold privately,

and there is plenty of demand, the order-book for Christmas closing often so early as October.

The leather used is mostly persian and morocco, and is brought from Wolverhampton. All the cutting is done by hand; the sewing of the linings is done on an ordinary sewing-machine, outside sewing is done by hand; monograms, fasteners, and so on are all handwork. There is plenty of scope for originality in artistic design, and the success of the industry is due to individual capability.

Handicrafts in the Women's Institutes

There are nearly 200 Women's Institutes in Wales and the number is increasing,[1] even though enthusiasm and the number of members in some individual Institutes is seen to wane after the first few years. These clubs for country women are making a great contribution to the social life of many a village, and handicrafts have a prominent place in their programmes.

Women's Institutes hold classes for making baskets and trays, woollen rugs, gloves, and leather bags; for curing rabbit-skins, for sewing, knitting and crochet, upholstery and household jobbery; there are also classes for cookery, preserving, and housewifery.

Glove-making is perhaps the most widespread of the Women's Institute crafts. They are made of suède, chamois, and sometimes of fur, including home-cured rabbit-skins. Leather bags are also made. All the articles made are for family use, and there is no attempt to sell except to friends.

Basket-making was carried on in several centres but not for long, partly because willow is harsh and strenuous for women to work with, and partly because there is in some places a local basket-maker, perhaps blind, with whose livelihood his neighbours do not wish to interfere. There is a similar feeling about household and jobbery classes; many members consider it unfair to the tradesmen if these crafts are taken up by women who have no need to earn money. Although Institutes are for all classes, in most of them either working-class women or the well-to-do predominate. Amongst both types the same opinion is expressed, that it is a mistake to teach the crafts of local tradesmen.

The majority of members have not the time to take up a craft seriously, and there is very little desire to work for a

[1] In May 1926 there were 230.

profit; it is even considered derogatory amongst the working-class members no less than the others to sell except to friends. But many members desire to learn crafts useful in their homes; if they do not wish to make money, they like to save expense; they also enjoy some pleasant and novel occupation in their somewhat limited leisure hours. Thus, except in isolated cases here and there, the handicrafts of the Women's Institutes are of recreational rather than economic importance.

Yet it is felt by some Institute workers that the Institutes might be stabilized and continuity be achieved if the handicrafts could be developed on economic lines. For this it would be essential to find and keep some market outside the village, by concentrating on one, or on a few, allied crafts in which skill could be maintained, and by giving some guarantee that all the goods offered were up to the required standard in quality. Punctual delivery is another great asset in business, and one that is always difficult to attain amongst home and leisure-time workers.

Nevertheless, Institute crafts play an important part, and indirectly an economic one, in village life, for the standard of workmanship is undoubtedly raised, and the interests of village life increased, through Women's Institute classes. While handicrafts appeal to members, there will be this educational influence in the villages with Institutes. At first it was very difficult to get teachers of handicrafts, and though annual grants were made for this purpose in some counties, most of these have now ceased. 'The Guild of Seamers' Handicrafts Schools' have met this need. A few members from each of several counties assemble for a fortnight for periodical courses, and undertake to give instruction afterwards in their own neighbourhood.

If handicrafts taught through Women's Institutes have not yet any appreciable economic importance, it would be rash to say whether indirectly they may not enrich country life by the education that they can give, in developing appreciation of good work and material as well as resourcefulness, taste, and skill of hand.

Arts and Crafts Schools

There are a few Arts and Crafts Schools, the oldest of which is situated at Carmarthen. They give instruction mostly in woodwork and carving, sewing, embroidery, &c.,

and their work from an educational point of view is of great value. More schools of this kind would be a great advantage, but in a sparsely populated area only a very small percentage of the population are able to benefit by such institutes.

At the Ladies' Training College, Barry, great attention is paid to the teaching of handicrafts. The intention is for each student during her time at the college to learn one or perhaps two crafts, so that later when teaching in the elementary school, as most of the students do, she will be able to introduce and teach the craft she learnt. This experiment has only been working for a few years, and it is not yet possible to judge of results. Among the crafts taught are leather-work, bookbinding, metal-work and jewellery, pottery, weaving, lace-making, and costumes of specified periods.

This experiment was started by the late Principal mostly for its educational value, and considering the limited means available it promises to be a success.

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